

Hugh Cecil Earl of Lonsdale.



A RAM
of the Dudley Breed now Shorn

Pl. 103

OBSERVATIONS

ON

LIVE STOCK;

CONTAINING

HINTS FOR CHOOSING AND IMPROVING

THE BEST BREEDS

OF THE MOST USEFUL KINDS

OF

DOMESTIC ANIMALS.

BY GEORGE CULLEY,

FARMER, NORTHUMBERLAND.

THE FOURTH EDITION,

WITH AN

APPENDIX.

LONDON:

PRINTED FOR G. WILKIE AND J. ROBINSON; J. WALKER;
AND G. ROBINSON, PATERNOSTER-ROW; AND
J. HARDING, ST. JAMES'S STREET.

1807.

G. Woodfall, Printer, Paternoster-row.

TO

THE RIGHT HONOURABLE

JAMES,

EARL OF HOPETOUN,

WHO,

ALONG WITH OTHER RURAL IMPROVEMENTS,

HATH BEEN PARTICULARLY ATTENTIVE

IN SELECTING AND IMPROVING

THE BEST BREEDS

OF THE DIFFERENT KINDS

OF

LIVE STOCK,

THE FOLLOWING PAGES ARE,

WITH THE UTMOST RESPECT,

MOST HUMBLY INSCRIBED,

BY

HIS LORDSHIP'S MOST OBEDIENT,

AND

VERY HUMBLE SERVANT,

THE AUTHOR.

CONTENTS.

PAGE

INTRODUCTION - - - - 1
Obstacles to improvement - - 8
Breeding by the nearest affinities, not prejudicial 9
Best mode of breeding - - - 11
Mode of knowing quick feeders - - 14
Names of animals at different ages - 16

HORSES - - - - - 21
Description of a Horse - - *ibid.*
Cleveland Bays - - - 25
Suffolk Punches - - - - 27
Clydesdale - - - - 29
Blacks - - - - - 30
Welch and Scotch - - - 35

NEAT CATTLE - - - - 37
Description of a Bull - - - 38
Short horned or Dutch Breed - - 40
Devonshire - - - - 51
Sussex and Herefordshire - - - 52
Long-horned - - - - 53
Galloway or Polled - - - 59
Suffolk Duns - - - - 65
Kyloes - - - - - 67
Alderney - - - - 72

Wild

Wild Cattle - - - - - 73
Comparative observations - - - - 78
Drawing Oxen - - - - - 83
Great milkers not quick feeders - - 87
Irish Cattle - - - - - - 90
Descriptions of Cattle by the ancients - 92

SHEEP - - - - - - 100
Description of the Ram - - - 103
Dishley Breed - - - - 105
Lincolnshire - - - - 111
Teeswater - - - - 121
Devonshire Natts - - - 125
Exmoor - - - - *ibid.*
Dorsetshire - - - - 127
Herefordshire - - - 132
Southdown - - - - 136
Norfolk - - - - - 139
Heath - - - - - 143
Herdwick - - - - 147
Cheviot - - - - 150
Dun-faced - - - - 160
Shetland - - - - 162
Irish - - - - - - 166

SWINE - - - - - - 171
Berkshire Pigs - - - 172
Chinese or Black Breed - - 174
Highland or Irish - - - 175

GENERAL

GENERAL REMARKS - - - 177
Big-boned animals, not the best - - *ibid.*
Short legs, no excellence - - 185
Distinctions between Essentials and Non-essentials 186
Best Stock not found upon the best lands - 188
On Beef and Mutton - - - 190
On Tallow - - - - - 194
On Folding - - - - - 195
On Watered Meadows - - - 200
Rules for knowing the Age of Domestic Animals, by casting their Teeth, &c. - 208
On Rabbits - - - - 215
On Asses and Mules - - - 219
On Goats and Deer - - - 220
On Poultry - - - - 221

APPENDIX
Merino Sheep - - - 223

INTRODUCTION.

IT has been matter of surprise to many, that none of our countrymen have hitherto attempted to write a Treatise, expressly, upon what farmers call Stock; by which are meant those domestic animals with which our fields, our yards, and stables, are, or ought to be, stored; such as horses, neat cattle, sheep, and swine; the knowledge of which is, at this period of improvement, as necessary for the farmer as the proper cultivation of a field for wheat, barley, turnips, or any other crop. For, according to the present improved system of farming, there is such a connection between the cultivation of ground, and breeding,

rearing, and fattening cattle, sheep, and other domestic animals, that a man will make but an indifferent figure in rural affairs, if he does not understand the latter as well as the former. Our shelves are loaded with volumes that have been written upon Agriculture, while but little has been said upon those very useful animals above mentioned. Conscious of my own inability to undertake so important and necessary a task, I repeatedly solicited some of my acquaintance, whom I believed to be well able to perform it; and in particular, one for whose abilities I have the highest respect, whose whole life has been employed in breeding and improving stock, and who, by long experience, has carried it to very great perfection. But being unable to prevail upon him to undertake the task, I shall venture to offer my own thoughts to the public, in hopes that they may induce some abler person to investigate more fully this hitherto unexplored

unexplored branch of rural Science, for the good of mankind, and benefit of my brother breeders.

In the following sheets I shall endeavour to describe the different breeds and varieties of breeds of domestic animals, which *have come under my observation*, and to point out their good or bad properties, and endeavour to describe the mode of management generally practised, where each distinct breed is most prevalent; and wherever it has occurred, that an advantage could be obtained by adopting or introducing a different breed, I have taken the liberty to recommend it, and to point out what particular breeds were the best adapted for particular situations: for it must be obvious to every person of the least observation, that the large long-woolled sheep, which do so well upon all the inclosed parts of the island wherever they have been tried, are by no means fit for, nor even could they subsist upon, the

cold heathy mountains of Yorkshire, Westmoreland, Cumberland, Scotland, &c. &c. upon which the black-faced, coarse-woolled tribe, have, for so long a time, been bred, and probably with greater advantage than any other breed we know.

Between these two extremes it is probable there are many situations, in which neither of the two breeds above named would be most profitable; but, fortunately for the farmer, there are other breeds, and varieties of breeds, which may suit his particular situation, and be more eligible for him to propagate. To find out this most useful breed, or variety of breeds, may be easily done by any sensible farmer, who will make a few experiments, and keep his mind open to conviction; but the greatest difficulty lies, in persuading the generality of farmers to lay aside their prejudices, make similar trials (fairly conducted), and be guided by the consequences:

quences: it is this prejudice, which is the bane of all improvements, not only in domestic animals, but in every department of agriculture: but which, I hope, will in a few years give way to experimental facts, and the most persuasive of all reasons—superior profits.

A person who has travelled through the different breeding counties, cannot but remark, the great diversity of opinion in the characteristic distinctions of excellence in domestic animals, particularly sheep. A Norfolk sheep-breeder says, sheep should be *black-faced* and *black-legged*; that their *horns* should come out *forward*, and turn in such a manner as you can see the *ears through*, or *behind*, the *circle of the horns*. —A Wiltshire sheep-breeder, on the contrary, says, that sheep should have *white faces* and *white legs*; and that their *horns* should come out *backwards*, in such a manner, that the *ears* may be seen *before the horns*.—But a Sussex breeder insists

upon it that they are both wrong; because sheep should be *grey-faced* and *grey-legged*, and have *no horns*.—Thus it appears how widely different these worthy people are in their opinions; and yet they cannot all be right, though they most assuredly think so.

Could any of these people be prevailed upon to make an experiment, they would most probably find, that excellence does not depend on the *situation* or *size* of *horns*, or on the colour of *faces* and *legs*, but on other *more essential properties*; and that the result of such experiments would be, a conviction that there were other breeds of sheep better adapted to their situation, and more profitable, than the breed they had been in possession of for so many years.

But it is curious to observe, in general, how highly satisfied and convinced each separate district is of having the *best stock*; for, according to the vulgar phrase, every

distinct county has "*the best in England.*" Self-satisfied with this contracted idea, they rest contented without a wish for further improvement, until some one adventurer, of a more enterprising spirit than his neighbours, makes his way into a distant part of the kingdom, where he unexpectedly is struck with a breed of neat cattle, sheep, &c. superior to any at home, or that he had ever seen before; after a proper consideration, he buys or hires some of these, benefits himself and the neighbourhood where he lives by the introduction of a more valuable breed of animals than they had hitherto been acquainted with, which, by degrees, spread themselves through the country.

It will be necessary here to observe, that there are some parts of the kingdom I have never had an opportunity of visiting; particularly Shropshire, Sussex, Devonshire, Cornwall, and a great part of Wales. But I can assure my readers, that I have re-

peatedly visited most of the other breeding districts in the island; especially Lincolnshire, Leicestershire, and the adjoining midland counties, where I apprehend the best and most profitable kinds of sheep are bred, and where the breeders have been at more pains than those of any other district.—Amongst these attentive breeders I have spent weeks and months in different years, and used every fair means to gain information of the most approved practices of breeding.—These practices, for many years, I have pursued in the counties of Durham and Northumberland with great success; and the breeders in these northern counties and the borders of Scotland, now and for a number of years, have adopted and followed the Dishley breed, with an avidity that is perhaps the best proof of its superiority.

The great obstacle to the *improvement* of domestic animals seems to have arisen from a common and prevailing idea amongst

breeders

breeders—that no bull should be used in the same stock more than three years, and no tup more than two ; because, (say they) if used longer, the breed will be *too near akin*, and the produce will be *tender*, *diminutive*, and liable to *disorders :* some have imbibed the prejudice so far as to think it *irreligious* ; and if they were by chance in possession of the best breed in the island, would by no means put a male and female together that had the same sire, or were out of the same dam.

But, fortunately for the public, there have been men, in different lines of breeding, whose enlarged minds were not to be bound by vulgar prejudice, or long-established modes, and who have proved by many years' experience, that such notions are without any foundation.

Mr. Blakewell has not had a cross (from any other breed than his own) for upwards of 20 years ; his best stock has been bred by the nearest affinities; yet they have not

not decreased in size, neither are they less hardy, or more liable to disorders; but, on the contrary, have kept in a progressive state of improvement.

This mode has also been frequently practised in breeding the best dogs and game-cocks.—A certain gentleman, who produced the best pointers in the north of England for many years, never bred from any other than his own; because, he said, he could not find better to cross them with. —And I am informed from good authority, that a breeder of game-cocks, who was very successful, would never allow his breed to be contaminated by crossing with others; and to this precaution he attributed all his superiority.

But one of the most conclusive arguments that crossing with different stock is not necessary to secure size, hardiness, &c. is the breed of wild cattle in Chillingham-Park, in the county of Northumberland. It is well known these cattle have been

been confined in this park for several hundred years, without any intermixture; and are, perhaps the *purest breed* of cattle of any in the kingdom. From their situation and uncontrolled state, they must indisputably have bred from the nearest affinities in every possible degree; yet we find these cattle exceedingly hardy, healthy, and well formed, and their size, as well as colour, and many other particulars and peculiarities, the same as they were 500 years since.

From these instances it appears there can be *no danger* in breeding by the nearest affinities, provided they are possessed in a *superior degree* of the qualities we wish to acquire; but if not possessed of these, then we ought to procure such of the same kind as have, in the most eminent degree, the valuable properties we think our own deficient in. It is certainly from the *best males and females* that *best breeds* can be obtained or preserved;

served; to breed in this manner is undoubtedly right so long as *better males* can be met with not only amongst our neighbours, but also amongst the most *improved breeds* in any part of the island, or from any part of the world, provided the expence does not exceed the proposed advantage. And when you can no longer, at home or abroad, find *better males* than your own, then, by all means, breed from them; whether horses, neat-cattle, sheep, &c. for the same rule holds good through every species of domestic animals: but, upon no account, attempt to breed or cross from *worse* than your own; for that would be acting in contradiction to common sense, experience, and that well-established rule —"*That best only can beget best*;" or, which is a particular case of a more general rule, viz. that "*Like begets like.*"

On this simple axiom the whole mystery of improving stock seems to depend, and, like many other valuable truths, has been

been neglected, most probably for its simplicity; and other modes pursued as whim or fancy directed, without either reason or experiment to support, or even give the least colour of plausibility to the practice.

I find the farmers, in most breeding countries, complain of their old breed being lost, or at least much worn out. That there may be some truth in these complaints, I will not deny: but perhaps there may be other reasons, which in some measure contribute to lead people into this way of thinking. In this age of improvement, I apprehend we examine more narrowly; we distinguish with more perspicuity, and consequently we judge more accurately. We are not content now with judging by one of our senses (as I believe used to be the case), by looking only; but we now join the sense of feeling to seeing: the farmer or breeder of this day is not ashamed to learn from the butcher, to feel with his fingers—that touchstone of knowledge in regard

regard to judging of animals, already prepared, or to be prepared, for the shambles. We, undoubtedly, first judge by the sight; which, being pleased, we bring the sense of feeling to its assistance; and if this also approves, we then conclude that the animal suits our purpose, or is answerable to the idea we have formed of it.*

From

* A nice or good judge of cattle and sheep, with a slight touch of the fingers upon the fatting points of the animal, viz. the hips, rumps, ribs, flank, breast, twist, shoulder-score, &c. will know immediately whether it will make fat or not, and in which part it will be the fattest.—I have often wished to convey in language that idea or sensation we acquire by the touch, or feel of our fingers, which enables us to form a judgment when we are handling an animal intended to be fatted, but I have as often found myself unequal to fulfil that wish.—It is very easy to know where an animal is fattest which is already made fat, because we can evidently feel a substance or quantity of fat, upon all those parts which are denominated the fatting points; but the difficulty is, to explain how we know or distinguish animals in a lean state, which will make fat, and which will not, or rather which will make fat in such and such points or parts, and not in others; which a person of judgment *(in practice)* can tell, as it were instantaneously. I say *in practice*, because I believe that the best judges

out

From these, and such-like reasons, I have been induced to believe that breeders and graziers are misled or mistaken, at least in a great measure, respecting the breeds of cattle, sheep, &c. being lost; and of those animals being worse now than formerly. The fact I apprehend is, that from our more attentive observations, we are be-

out of practice are not able to judge with precision, at least I am not.—We say this beast *touches* nicely upon its ribs, hips, &c. &c. because we find a mellow, pleasant feel on those parts: but we do not say soft; because there are some of this same sort of animals which have a soft loose handle, of which we do not approve, because, though soft and loose, have not that mellow feel above mentioned: for, though they both handle loose and soft, yet we know that the one will make fat, and that the other will not; and in this lies the difficulty of the explanation: we clearly find a particular kindliness, or pleasantness, in the feel of the one, much superior to the other, by which we immediately conclude, that this will make fat, and the other not so fat; and in this a person of judgment, and *in practice*, is very seldom mistaken. I shall only make one more remark, which is, that though the one animal will make remarkably fat, and the other will scarcely improve at all, with the same keeping; yet between these extremes are numberless gradations, which the complete judge can distinguish with wonderful precision.

come

come worse to please; and if matters go on in the right line, we shall every day become nicer and clearer in our judgments of stock, as well as other things.

Domestic animals, at different ages, being called or known by different names, in different parts of the kingdom, it may not be amiss to note a few of the principal distinctions:—

A *stone-horse*, or *stallion*, is the name by which the full-grown male of the horse kind is distinguished.—Whilst sucking, he is a *colt-foal*; then a *yearling colt*; afterwards a *two* or *three-years-old colt*, until *four*, when they are most commonly called *horses*.

The female is called a *mare*; when sucking, a *mare* or *filly-foal*; then a *yearling filly*; afterwards, a *two* or *three-years-old filly*; and at *four*, becomes a *mare*.

The

The general name of the male in neat-cattle is *bull*; during the time he sucks, he is called a *bull-calf*, until turned of a year old, when he is called a *stirk* or *yearling-bull*; then a *two*, *three*, or *four-years-old bull*, until *six*, when he is *aged*; but when castrated or gelt, he is called an *ox*, or *stot-calf*, until a year old, when he is called a *stirk*, *stot*, or *yearling*, then a *two-years-old steer*, and in some places, a *twinter*; at *three*, he is called a *three-year-old steer*; and at *four*, he first takes the name of *ox* or *bullock*:—though formerly, I believe, the castrated male was not called an *ox* or *bullock* until *six* years old*, when he is looked upon to be at the best, though some people think an ox improves until *seven*, *eight*, or even *nine* years old.

The general name of the female of this kind is *cow*; when sucking the dam, she is called a *cow-calf*; then a *yearling quey*,

* I apprehend the taking the name of *ox* or *bullock* at *four* instead of *six* years old, has taken place since the drawing or working of oxen has been so much disused.

or *heifer*, or *twinter*; the next year, a *three-years-old quey*, or *heifer*; and when *four*, she is first called a *cow*, which name is retained till the last. If castrated or *spayed*, she is called a *spayed* or *cut heifer*, or *spayed* or *cut quey*, in the north parts of this island.

The general name by which the male sheep are known, is *ram* or *tup*: when lambs, they are called *ram* or *tup-lambs*, as long as they suck; from weaning, or taking from the ewes, to the shearing or clipping for the first time, they are called *hogs*, or *hoggerels*, or *lamb-hogs*; then they take the name of *shearing*, *shearling*, *shear-hog*, or *dinmond-tups*, or *rams*; after that, according to the year they are clipped or shorn, they are called *two-shear*, *three-shear*, and so on, which always takes place from the time of shearing. But when gelt or castrated, they are called *wether-lambs* while sucking; then *wether-hogs*, until shorn or clipped, when they take the name of *shearlings*, &c. until they are shorn a second

second time, when they are *young wethers*, or *two-shear wethers*; then *three* or *four shear wethers*, or more, according to the times they are clipped or shorn.

The general name by which the female sheep are known is *ewe*; while sucking, they are called *ewe-lambs*, or *gimmer-lambs*; but when weaned, or taken from the dams, they are called *ewe-hogs*, or *gimmer-hogs*, until clipped or shorn, for the first time, when they take the name of *gimmers*; which name continues only one year, until they loose their fleeces a second time, when they obtain the name of *ewes*, which they retain as long as they live; only every time they are shorn, they add a year to their age, and are called *two-shear*, *three-shear*, or *four-shear ewes*, according to the times they have been clipped or shorn: and this holds good of all other sheep; for the age of sheep is not reckoned from the time they are lambed, but from the time of shearing; for although a sheep is generally 15 or 16 months old when first shorn,

yet they are not called *shearlings* until once clipped, which is understood to be the same as one year old.

What we call *gimmers* in the North, in many of the midland parts of England are called *theaves*; and when twice shorn, *double-theaves*.—There are other variations of names, in different parts, which I do not recollect.—In some places they call the male lambs *heeders*, and the females *sheeders*; and in others, *hogs* are called *tegs*, and two-years-old ewes, *twinters*, and three-years-old, *thrunters*.

Of the pig-tribe, the male is called a *boar* or *brawn*; the female, a *sow*; the cut or castrated female, a *gilt* or *gaut*.—In the southern parts, pigs are in general called *hogs*; and in the northern parts they are frequently called *shots*, after being weaned. —*Pigs* or *swine* are common names for the whole tribe.

HORSES.

HORSES.

THIS species of domestic animals being universally allowed to be of great service to mankind in general, and the farmer in particular, we shall give them the first place in our arrangement; and whatever be the variety, their form should answer the following

DESCRIPTION OF A HORSE.

His head should be as small as the proportion of the animal will admit; his nostrils expanded, and muzzle fine; his eyes chearful, and prominent; his ears small, upright, and placed near together; his neck, rising out from between his shoulders with an easy tapering curve, must join

 gracefully

gracefully to the head; his shoulders, being well thrown back, must also go into his neck (at what is called the points) unperceived, which perhaps facilitates the going much more than the narrow shoulder*; the arm, or fore-thigh, should be muscular, and tapering from the shoulder, meet with a fine straight, sinewy, bony leg; the hoof circular, and wide at the heel; his chest deep, and full at the girth; his loin or fillets broad and straight, and body round; his hips or hooks, by no means wide, but quarters long, and tail set on, so as to be nearly in the same right line as his back; his thighs strong and muscular; his legs clean, and fine-boned; the leg-bones not round, but what is called lathy, or flat.

It is generally thought that we only have two original breeds of horses in this

* Whoever has observed a greyhound or a hare, will perceive how very wide they are made at the upper part of the shoulders, and there are few animals that move with so much ease and swiftness.

island, viz. the race or blood kind, and the black cart-breed: the rest have been supposed to be only variations from these two by repeated crossings: and yet we are struck with surprise, when we consider the difference between the gigantic dray-horse, 18 hands high, stalking upon the London pavements, and the small Highland, or Shetland poney, tripping over the mosses with a heavy load, though not more than nine hands, or 36 inches high, when at its full growth.—From the size and form of these ponies, we are inclined to believe, that there are at least *three* distinct breeds of horses, viz. the racers, the heavy blacks, and the Shetland ponies.

The breed of horses to whose improvement the greatest attention has been paid, is the racing or blood kind, of which I shall decline saying any thing about; 1*st*, because I know very little concerning them; and, 2*dly*, because I think farmers ought to have little more to do with

them, than occasionally putting a good mare to a strong well-proportioned blood-horse, by way of mixing a little blood amongst our chapmen or riding horses. Perhaps, for some particular uses, even a plough horse may not be the worse, for having a little blood in him, as it is termed; and every man who has been much accustomed to ride different breeds of horses, will soon discover that a horse which has a little blood in him, will usually perform a pleasanter day's work, than one that is not related to the racing breed*, and it is probably from this cause that the *Yorkshire*

* Objections have been made by late writers to crossing of breeds of animals; I cannot help being of a different opinion with regard to HORSES; because, from many years' experience, I have much reason to believe, that great improvements have been, and may be, made by crossing, amongst the different breeds of horses; and I apprehend, it is from these crosses, *properly made*, that this island has been long famous for such a noted and excellent breed of hunters and saddle-horses, insomuch that great numbers are yearly bought up for France and other parts of the continent.—If crossing was not of use, why should the gentlemen

Yorkshire draught horses, and particularly the

CLEVELAND BAYS,

are so justly esteemed for their great exertions in the coal and lime season; the weights carried, distance travelled, and the time it is performed in for several weeks together, are certain proofs of their activity, strength, and hardiness*. Their

gentlemen of the turf have been at the trouble and expence of procuring stallions from Arabia, Turkey, &c.? The well-attested pedigrees of most of our Racers generally terminate with a Burton Barb, or Place's White Turk, &c.; a proof that this practice has been attended with success.—But I am told, that few or no Arabian or foreign stallions have been imported of late years; the breeders of race-horses finding they can now make more improvement, by breeding from the best English horses; a certain proof what attention will do, when joined with judgment and experience, and a laudable example to the breeders of other kinds of stock.

* Three horses carry a ton and a half of coals, travel 60 miles in 24 hours, without any other rest than two or three baits upon the road, and frequently perform this four times a week.

colour is mostly bay, and their form is such, that the mares, put to a full-blood stallion, breed excellent hunters and saddle-horses; and to a half-blood horse, capital coachers, or carriage-horses.

The breed of saddle-horses is confined, in a great measure, to Yorkshire, Durham, and Northumberland; the East-Riding of Yorkshire has been long eminent in that line. The annual fairs held at Northallerton, Howden, and York, exhibit the largest shows of these useful creatures: perhaps it may be owing to this that Yorkshiremen are in general called *jockeys*, or *knowing hands* in regard to horses; and indeed you will scarce meet with a farmer in that county, especially in the low part of it, who is not well skilled in them.

Since bay and other light-going horses have been preferred to the black breed for carriages, the Yorkshire breeders have gone so much upon these, that the old breed of riding or saddle-horses are much worn

worn out. This is owing, perhaps, not only to the greater demand for the latter, but also to the coach-horses being a stronger and larger breed; so that if they happen, from blemishes, not to answer for the harness, they suit for the plough or cart, while the saddle-horse, from the same misfortunes, is rendered, in a great measure, useless.

In most parts of the county of Suffolk we meet with a very useful breed of horses for the farmer, particularly in that part which is generally called High Suffolk, from which they have obtained the name of

SUFFOLK PUNCHES;

are in high estimation for ploughing and carting, and sold at greater prices than most other draught horses of their size (for I remember seeing few above fifteen and a half hands high.) It is probable their merit consists more in constitutional hardiness than true shape, being in general

general a very plain made horse; their colour mostly yellowish or sorrel, with a white ratch or blaze on their faces; the head large, ears wide, muzzle coarse, fore-end low, back long, but very straight, sides flat, shoulders too far forward, hind quarters middling, but rather high about the hips, legs round and short in the pasterns, deep-bellied and full in the flank; here, perhaps, lies much of the merit of these horses, for we know from observation and experience, that all deep-bellied horses carry their food long, and consequently are enabled to stand longer and harder days' works;—hence the old Scotch proverb,

"A *horse* with a wame,
"And a *mare* with nane."

However, certain it is, that these horses do perform surprising days' works: it is well known that the Suffolk and Norfolk farmers plough more land in a day than any

any other people in the island, and these are the kind of horses every where used in those districts.*

The CLYDESDALE HORSES

are probably as good and useful a draught horse as any we are possessed of: they are larger than the Suffolk Punches, being from 15 to 16½ hands high, strong, hardy, and remarkably true pullers, a restive horse being rarely found amongst them: in point of shape, they are in general plain made about the head, sides, and hind-legs; they are mostly of a grey or brown colour, and are said to have been pro-

* A stallion and a few mares of this breed were introduced into Scotland by the Earl of Hopetoun, and it gave me great pleasure to be informed by his lordship's groom, that both they and their progeny answer extremely well. This worthy nobleman is never so happy as when he can introduce any thing that will benefit his tenants, neighbours, and country.

duced

duced by a cross betwixt the mares of the common Scotch kind, and six coach-horses (all stallions), brought from Flanders by a Duke of Hamilton, about one hundred years since.

The heavy BLACK HORSES

are almost universally bred through the midland counties, particularly Leicestershire, Warwickshire, Staffordshire, and Derbyshire. It is the universal custom in those districts for the farmers to use mares only for labour; these are all put to the horse, the male produce of which supply the army, London, and most of the south and western counties, with horses for their farming teams. The largest go to the capital for dray-horses; they next supply the farmers in the southern counties, for their waggons, ploughs, &c.; and the rest mount our cavalry, or are trained for carriages,

carriages, while a few of the choicest are very properly preserved for stallions.

The vanity of many of the farmers in the South, in regard to their teams, is most extraordinary. I have, in Berkshire and that neighbourhood, several times met a narrow-wheeled waggon, with six stallions, one before another; the first horse, besides having on a huge bridle, covered with fringe and tassels, enough to half-load a common Yorkshire cart-horse, has six bells hung to it, the next five, and so on to the last, which has only one; and it is really diverting to see with what a conceited air the driver struts and brandishes his long whip.—A strange contrast this with the poor Highlander carting home his peats for winter fuel, when frequently both horse and cart are not of the same value as the harness used to a Berkshire waggon-horse! The reader will not be surprised, when I assure him, that I have in Scotland many times seen a horse

a horse and cart conveying peats or turfs, when the whole apparatus contained neither iron, leather, nor hemp. The collar or braham was made of straw, the backband of plaited rushes, and the wheels of wood only, without bush of metal, or binding of iron.

One of the Earls of Huntingdon, returning from an embassy to the States-General, brought home with him a set of coach-horses of the black breed, from the Continent. Most of these being stallions, he with some difficulty prevailed upon his tenants by the Trentside, to put their mares to them; which cross answered so well, that the breed in that neighbourhood has been in the greatest repute ever since. This, many years afterwards, induced Mr. Bakewell and Mr. George Salisbury to cross the German Ocean in search of horses and mares to improve the English breed; and after much labour and expence, they returned with half a dozen Dutch

or

or Flanders mares. Mr. Blakewell says, that he never met with a man but he could have prevailed upon him to part with his stock for money, except in Holland, where he met with a Dutch boor, who would not sell one of his mares for any price he could offer; and any body who knows the above great breeder, will be sensible that he would not pinch for price, who gave above seventy guineas, when beginning business, for a cart-mare to breed from. Though these Dutch mares were of use in improving the Leicestershire black breed, yet it perhaps scarce answered the end proposed; because, by this time, the heavy unwieldy black horses were growing into disrepute; the nobility and gentry had begun to run bay horses in their carriages, and light horses were more used in the army: for drays and waggons the heavy blacks yet are, and probably long will be, a valuable breed. But the present system of farming requires horses of more mettle

and activity, better adapted for traveling, and more capable of enduring fatigue, than those above mentioned. It is long since I was told by the Cleveland farmers, that the black horses could not stand the work, nor go at the rate, of their own country horses; that whenever they were put past their pace, they greased, and frequently went blind. Yet it is in this industrious part of Yorkshire, and in Norfolk,* Suffolk, &c. that we must look for farming horses able to go through fatigue and hardship, able to walk at a pace that the others cannot, and able to work six days in every week in the year. It is a well-known fact, that these will, upon an average, wear as long again as the rough fleshy-legged black breed.

* The Norfolk farmers could not sow from two to four hundred acres of turnips upon one farm, in proper time, in the same season, and plough from two to near three acres per day, with one pair of horses, if they had them not from a hardier and nimbler breed than those alluded to.

The

The best and hardiest horses for the draught, I ever remember to have seen, proceeded from a cross between the country mares by the Tees' side, and a stallion brought from Holstein. They are not tall horses; rising only from about fourteen hands three inches to fifteen hands three inches; exceedingly strong made, with short clean-boned legs, very firm carcases, and equal to any fatigue.

The WELCH HORSES

are a very hardy breed, but rather small for the team; but where they are good goers, few or none can equal them for the road; none stand our turnpikes like them: and I well remember one, that I rode for many years, which, to the last, would have gone upon a pavement by choice, in preference to softer road.

The SCOTCH HORSES,

like the Welch, are exceedingly hardy,

but too small for the draught, except the Clydesdale horses, &c. taken notice of before. Those properly called galloways, are now rarely to be met with, from an inexcuseable inattention to the breed, which is nearly lost. From their name, we may suppose, they originated in the county of Galloway; and it is generally said was owing to crossing with the Spanish horses, when a part of their *invincible* armada was shipwrecked upon those rocky coasts. There is much probability in the account; but whether true or not, is not so material, as the loss of so valuable a breed of little horses is to be lamented.



A BULL
of the short horn'd Breed

Pa 37

NEAT CATTLE.

OF this species of domestic animals I apprehend we have several different breeds: the following are such as have come either under my own observations, or been procured from the communications of friends, or other undoubted authorities, and which are arranged as follows:—

1st. The Short-horned; including the varieties of the Dutch and Devonshire breeds.

2d. The Long-horned, or Lancashire breed.

 3d. The

3d. The Polled, humbled, or Galloway breed; including the variety of the Suffolk duns.
4th. The Kyloes, or Scotch breed.
5th. The Alderney, or French breed.
6th. The Wild breed.

But whatever be the kind, I presume, that to arrive at excellence, there is one form or shape essential to all, which form I shall attempt to give in the

DESCRIPTION OF A BULL.

The head of the bull should be rather long, and muzzle fine; his eyes lively and prominent; his ears long and thin; his horns white; his neck rising with a gentle curve from the shoulders, and small and fine where it joins the head; his shoulders moderately broad at the top, joining full to his chine* and chest backwards, and to

* In some places this part is called the crops.

the neck-vein (1) * forwards; his bosom open; breast broad, and projecting well before his legs; his arms or fore thighs muscular, and tapering to his knee; his legs straight, clean, and very fine boned; his chine (2) and chest so full as to leave no hollows behind the shoulders; the plates (3) strong, to keep his belly from sinking below the level of his breast; his back or loin (4) broad, straight, and flat; his ribs rising one above one another, in such a manner that the last rib shall be rather the highest, leaving only a small space to the hips (5) or hooks, the whole forming a round or barrel-like carcase; his hips should be wide placed, round or globular, and a little higher than the back; the quarters (from the hip to the rump) long, and instead of being square, as recommended by some, they should taper gradually from

* Some parts of cattle being called by different names, in different places, these figures refer to the annexed plate, for the purpose of explanation.

the hips backward, and the turls or pott-bones (6) not in the least protuberant; rumps close to the tail; the tail broad, well haired, and set on so high as to be in the same horizontal line with his back.

The Short-horned, or DUTCH Kind,

differ from the other breeds in the shortness of their horns, and in being wider and thicker in their form or mould, consequently feed to the most weight, in affording by much the greatest quantity of tallow when fattened, in having very thin hides, and much less hair upon them than any other breed (Alderneys excepted); but the most essential difference consists in the quantity of milk they give beyond any other breed*;

* There are instances of cows giving 36 quarts of milk per day, and of 48 firkins of butter being made from a dairy of 12 cows; but the more general quantity is 3 firkins per cow in a season, and 24 quarts of milk per day.

the

the great quantity of milk, thinness of their hides, and little hair, is probably the reason why they are tenderer than the other kinds, Alderneys excepted.

It is said of this kind, and I suppose very justly, that they eat more food than any of the other breeds; nor shall we wonder at this, when we consider, that they excel in those three valuable particulars, viz. in affording the greatest quantity of beef, tallow, and milk.—Their colours are much varied; but the generality are red and white mixed, or what the breeders call *flecked*; and, when properly mixed, is a very pleasing and agreeable colour.

There are many reasons for thinking this breed has been imported from the Continent.—First, because they are still in many places called the *Dutch breed*. Secondly, because we find very few of these cattle any where in this island, except along the eastern coast, facing those parts of the continent where the same kind

kind of cattle are still bred, and reaching from the southern extremity of Lincolnshire to the borders of Scotland. The long horns and these have met upon the mountains which separate Yorkshire from Lancashire, &c. and, by crossing, have produced a mixed breed, called *half long-horns*; a very heavy, strong, and not unuseful kind of cattle; but we do not find that the one kind have spread further west, nor the others further east. But, thirdly, I remember a gentleman of the county of Durham (Mr. Michael Dobinson), who went in the early part of his life into Holland in order to buy bulls; those he brought over were of much service in improving the breed; and this Mr. Dobinson and neighbours, even in my day, were noted for having the best breed of short-horned cattle, and sold their bulls and heifers for very great prices. But afterwards, some other persons of less knowledge going over, brought home some bulls, that

that in all probability introduced along that coast the disagreeable kind of cattle, well known to the breeders adjoining the river Tees, by the appellation of *lyery*, or *double-lyered*; that is, black-fleshed; for, notwithstanding one of these creatures will feed to a vast weight, and though fed ever so long, yet will not have one pound of fat about it, neither within nor without*, and the flesh (for it does not deserve to be called beef) is as black and coarse-grained as horse-flesh. However, by the pains and attention of breeders, this useless disagreeable variety is now pretty well out of the country; no man will buy one of this kind, if he knows any thing of the matter;

* I once saw a beast of this sort killed, which, after feeding all Summer, had not a pound of fat inside nor out; but it was one of the completest of the kind I ever saw: its two ends, viz. shoulders and buttocks, were heavy, round and coarse, without any hip-bones at all standing up, and the body quite small; in short, it was more like an ill-made black horse, than an ox or a cow.

and

and if he should be once taken in, he will remember it well for the future; people conversant with cattle very readily find them out, by their round form all over, particularly their buttocks, which are turned like a black coach-horse, and the smallness of their tail. But they are best known to the graziers and dealers in cattle, by the feel or touch of the fingers; indeed it is this nice touch or feel of the hand, that in a great measure constitutes the judge of cattle.

This breed, like most others, is better and worse in different districts; not so much, I apprehend, from the good or bad quality of the land, as from a want of attention in the breeders. In Lincolnshire* (which is the farthest South that we

* In a journey through Lincolnshire in 1784, I was happy to find that many sensible breeders had improved their breed of short-horned cattle very much (since my visiting that fine country ten years before), by good bulls and heifers, brought from the counties of Durham and

we meet with any number of this kind of cattle) they are, in general, more subject to lyer, or black flesh, than those bred farther north; and in that rich part of Yorkshire called Holderness, they are much the same as those south of the Humber, of which we have been speaking. It is probable that they had either stuck more to the lyery black-beefed kind, than their more northern neighbours, at that unfortunate period when they were imported from the Continent, or that the latter had seen their error sooner. But, from whatever cause this happened, it is a fact that as soon as we cross the Yorkshire Wolds northward, we find this breed alter for the

and York, on both sides the Tees, where the best are confessedly bred. In another excursion in 1789, I met with a Mr. Tindale, of ————, near Sleaford, who has the best breed of cattle that I ever saw in that county, and, perhaps, inferior to few in any part of the kingdom. I was shewn an ox (near Lincoln) of his breed, that for true form and nice handling, exceeded any bullock I ever remember to have seen.

better;

better; they become finer in the bone, in the carcase, and, in a great measure, free from that disagreeable lyery sort which has brought such an odium upon this (perhaps) *most valuable breed*. When you reach that fine country on both sides the river Tees, you are then in the centre of this breed of cattle; a country that has been long eminent for good stock of all kinds; the country where the Dobinsons first raised a spirit of emulation amongst the breeders, which is still kept up by Mr. Hill, the Messrs. Charges, the Messrs. Collins, Mr. Maynard, &c. &c.

The object of extraordinary *large size* is not now so much the pursuit of the enlightened breeders of this neighbourhood, as the more valuable property of getting *fat* at an *early age*; and they have so far obtained this end, as frequently to sell their three-years-old steers to the butchers exceedingly fat in May for 20l. a-piece.—The management of such

such steers is in general as follows:—The first Winter they have hay and turnips; the following Summer, coarse pasture; the second Winter, straw in the fold-yard, and a few turnips, *once a day*, in an adjoining field, just sufficient to prevent the straw from binding them too much; the next Summer, tolerable good pasture; and the third Winter, as many turnips as they can eat, and in every respect treated as fatting cattle.

The heaviest and largest oxen of the short-horned breed, when properly fed, victual the East-India ships, as they produce the thickest beef, which, by retaining its juices, is the best adapted for such long voyages. Our royal navy should also be victualled from these; but by the jobs made by contractors, and other abuses, I am afraid our honest tars are often fed with beef of an inferior quality: however the coal ships from Newcastle, Shields, Sunderland, &c. are wholly supplied with the beef of these valuable animals.

These

These oxen commonly weigh from 60 to 100 stone (14lb. to the stone), and they have several times been fed to 120, 130, and some particular ones to upwards of 150 stone, the four quarters only.—Mr. Hill, of Blackwell, near Darlington, in the county of Durham, in December, 1779, had an ox killed, rising six years old, of his own breeding and feeding—the particulars of his weight, &c. are as under :—

	st.	*lb.*		*£.*	*s.*	*d.*
Two fore-quarters	75	7	at 4*s.* per stone	15	2	0
hind ditto	76	3	at 5*s.* ditto	19	1	0
Wt. of whole car.	151	10		34	3	0
Tallow	11	0	at 4*s.* ditto	2	4	0
Hide	9	0	at 4*s.* ditto	1	16	0
Total	171	10	Value	38	3	0

Two oxen, bred and fed by Sir Henry Grey, Bart. of Howick, in Northumberland, seven years old, were killed in March, 1787. and weighed as follows :—

The

The RED OX.

	st.	*lb.*		£.	*s.*	*d.*
Two fore-quarters	82	2	at 4*s.* per stone	16	8	6
hind ditto	70	7	at 5*s.* ditto	17	12	6
Wt. of whole car.	152	9		34	1	0
Tallow	16	7	at 4*s.* ditto	3	6	0
Hide	9	2	at 4*s.* ditto	1	16	6
Total	178	4	Value	39	3	6

MOTTLED OX.

	st.	*lb.*		£.	*s.*	*d.*
Two fore-quarters	80	7½	at 4*s.* per stone	16	2	2
hind ditto	72	0½	at 5*s.* ditto	18	0	2
Wt. of whole car.	152	8		34	2	4
Tallow	16	0	at 4*s.* ditto	3	4	0
Hide	9	11	ditto	1	19	2
Total	178	5	Value	39	5	6

An ox, 5 years old, bred and fed by Mr. Milbanks, of Barningham, in Yorkshire, was killed at Barnardcastle, in April, 1789, by Mr. Lonsdale;—his

	st.	lb		£.	s.	d.
Two fore-quarters	74	8½	at 4s. per stone	14	18	5
hind ditto	75	10	at 5s. ditto	18	18	7
Wt. of whole car.	150	4½		33	17	0
Tallow	16	0	at 4s. ditto	3	4	0
Hide	10	11	at 4s. ditto	2	3	0
Total	177	1½	Value	39	4	0

From the above statement it appears, that the Barningham ox, at 5 years old, was of equal value with the others at 6 and 7.

The heaviest females of this breed of cattle that have come to our knowledge, were,

A *Cow*, bred and fed by William Smith, Esq. of Togston, Northumberland—

	st.	lb.
Two fore-quarters -	65	4
hind ditto -	62	7
Weight of carcase -	127	11
Tallow -	15	12
Hide -	6	8
Total	150	3

A Spayed

A Spayed Heifer,

six years old, bred and fed by Sir Henry Grey, Bart. the carcase of which weighed, 132st. 6lb.

The Devonshire Cattle

are said to be found in the greatest purity, and of the best kind, in the vicinity of Barnstaple*; these are of a high red colour (if any white spots, they reckon the breed impure, particularly if those spots run into one another), with a light-dun ring round the eye, and the muzzle of the same colour; fine in the bone, clean in the neck, horns of a medium length bent upwards, thin faced and fine in the chops, wide in the hips, a toler-

* I was favoured with this account by the ingenious and intelligent Mr. Mure, agent to Lord Daer, who lately made an Agricultural Tour through the greatest part of England.

able barrel, but rather flat on the sides, tail small and set on very high; they are thin skinned, and silky in handling, feed at an early age, or arrive at maturity sooner than most other breeds; they are well fitted for draught, both as to hardiness, quick movement, and their shoulder points beautifully fitted for the braham or collar.

The Sussex and Herefordshire Cattle,

are varieties of the Devonshire, of a greater size: the Herefordshire being the largest. —Of these cattle I was favoured by Mr. Ellman with the following description: —Colour red, fine hair, and very thin skin, neck and head clean, horns neither long nor short, rather turning up at the points; in general well made in the hind quarters, wide across the hips, rump, and sirloin, but narrow on the chine; tolerably straight along the back, ribs or sides

sides lying too flat, thin in the thigh, and bone not large. An ox, 6 years old, when fat, will weigh from 60 to 100 stone (14lb. to the stone), the fore-quarters generally the heaviest. The oxen are mostly worked from 3 to 6 years old, sometimes 7, when they are turned off for feeding.

The calves run with the cows till they are 11 or 12 weeks old, when they are weaned and turned to grass. A good cow, after the calf is taken from her (if well kept,) will produce from 6 to 8lb. of butter a week, for 3 or four months after taking off the calf, and double that quantity of skimmed milk cheese. They do not give so large a quantity of milk as the Suffolk cattle, but it is much richer in quality.

The Long-horned, or Lancashire Kind,

are distinguished from others by the length of their horns, the thickness and

firm texture of their hides, the length and closeness of their hair, the large size of their hoofs, and coarse, leathery, thick necks; they likewise are deeper made in their fore-quarters, and lighter in their hind quarters, than the other breeds in general; they are narrower in their shape, less in point of weight, than the short-horns, though better weighers in proportion to their size, and give considerably less milk, though it is said to afford more cream in proportion.

They are more varied in colour than any of the other breeds; but whatever the colour be, they have (in general) a white streak along their back, which the breeders term *finched*, and mostly a white spot on the inside of the hough.

Many people contend that they are the native or original breed of this island. It is not easy to ascertain this matter. If I may venture a conjecture, I think it is probable these have been the inhabitants

inhabitants of the open plain country; whilst the Wild breed, or perhaps the Welch and Scotch, possessed the woody, wild, and mountainous parts of the island.—However, Lancashire at present, and for a long time past, has as much right to be called the mother-country for long-horned cattle, as Lincolnshire has to the large long-woolled sheep; for though all or most of the cheese-dairies in Cheshire, Gloucestershire, &c, and indeed the greatest part of the midland counties, employ a kind of long-horned cows, yet they are only a shabby mixed breed, much inferior in size and figure to the Lancashire breed, from whence it is very probable they all originated.

Leicestershire, Warwickshire, &c. have got a better and more profitable sort of long-horns than Lancashire at present, by buying their best bulls and heifers, for many years past, before the people of Lancashire were well aware of it.

The former paid more attention to that kind which were of a true mould or form, and quicker feeders; while the latter contented themselves with the old-fashioned, large, big-boned kind, which are not only slower feeders, but, when fed, are not such good beef. In short, the little farmers in Lancashire, tempted with the high prices given them for their best stock, had lost their valuable breed before they were sensible of it.

This breed is understood by graziers to be in general rather slow feeders, except that particular kind selected and recommended by Mr. Bakewell; these are said to eat less food than the others, to become remarkably fat in a short space of time, and to lay their fat upon the most valuable parts, but have little tallow in them when killed; and when used in the dairy, give very little milk. This variety also differs from the rest of the long-horned cattle, in having very fine, clean, small bones in their legs, and thin hides.

As

As I may have frequent occasion to mention Mr. Bakewell, from the superior manner in which he has distinguished himself in the breeding of cattle and sheep, I shall, by a short digression, endeavour to point out some of the principal advantages which this gentleman's breed of stock has over those that were in the greatest repute before his day; for he has not only selected a breed of cattle and sheep, different from, and superior in many essential respects, to most others, but established them in such a manner, as to gain ground in every corner of Great Britain and Ireland, in consequence of their superior merit.

The kind of cattle most esteemed before Mr. Bakewell's day, were the large, long-bodied, big-boned, coarse, flat-sided kind, and often lyery or black-fleshed.—On the contrary, this discerning breeder introduced a middle-sized, clean, small-boned, round-carcased, kindly-looking cattle, and inclined to be fat.

His

His sheep are still more excellent than his cattle; but as we shall have occasion to speak of these afterwards, I will only add, that perhaps this gentleman was the principal cause of the Lancashire people losing their best breed; but then he was also the means of establishing a much more advantageous one in Leicestershire.

There are several more eminent breeders in that spirited part of the island, where they have carried the breeding of useful stock to a perfection unknown in former days, and of which some parts of the island have still a very faint idea; to such, the prices given for the Stock of Mr. Fowler, of Little Rollright, in Oxfordshire, at his sale (27th March, 1791), will appear surprising, and shew in what estimation well-bred cattle are held amongst the breeders of the midland counties:—

Garrick,

Garrick, a 5-years-old Bull,	was sold for	205 guineas
Sultan, 2 ditto	ditto	210
Washington, 2 ditto	ditto	205
Young Sultan, 1 ditto	ditto	200
1 ditto	ditto	145
1 ditto	ditto	100
Brindled Beauty, a Cow		260
Washington's Mother, ditto		185
At Mr. Paget's sale (14th Nov. 1793), Shakespear, a Bull, bred by Mr. Fowler, was sold for		400

In the Spring of 1792, Mr. Bakewell let a Bull for 152 guineas, to be used only four months, viz. to go the first of May, and return home again on the first of September; probably the highest price that was ever given for the hire of a bull, to be used so short a time, and at so late a season.

The Galloway Breed, or Polled Cattle,

are a very valuable breed, and seem to be, in weight and size, as much less than the long-horns, as these are than the short-

short-horns; they generally weigh from 40 to 60st. some particular ones reach 70 and upwards; but their most essential difference from every other breed of cattle is, in having no horns at all; some few indeed (in every other respect Polls) have two little unmeaning horns, from two to four inches long, hanging down loose from the same parts that other cattle's horns grow, and are joined to the head by a little loose skin and flesh. In most other respects (except wanting horns) these cattle resemble the long-horns, both in colour and shape, only they are shorter in their form, which probably makes them weigh less. Their hides seem to be in a medium between the two last-mentioned breeds, not so thick as the long-horns, nor so thin as the short-horns; but, like the best feeding kind of long-horns, they lay their fat upon the most valuable parts, and their beef is well marbled, or mixed with fat.

We find a few of this breed straggling through

through different parts of England; among the rest, I remember the Earl of Darlington had a very handsome variety of them, finely globed with red and white. But we must look for the original of these in Galloway (a large district in the south-west of Scotland), where they are mostly bred upon the moors or hilly country, and grazed upon the lands nearer the sea, until rising four or five years old, when the graziers and drovers take them up in great numbers to the fairs in Norfolk and Suffolk, previous to the turnip-feeding season, from whence the greatest part are again removed in the Winter and Spring (when fat) to supply the amazing consumption of the capital, where they are readily sold, and at high prices; for few or no cattle sell so high in Smithfield market, they being such nice cutters-up, owing to laying the fat upon the most valuable parts; a great excellence in all feeding cattle. It is no uncommon thing,

in this refined market, to see one of these little bullocks outsell a coarse Lincolnshire ox, though the latter be heavier by several stones.*

I have been informed, from good authority, that the polled cows are very good milkers, in *proportion to their size*, and the milk of a rich quality, yielding much more butter from a given quantity of milk than the short-horns; and also, that the oxen and spayed-heifers answer well for the draught, which certainly adds to the value of this excellent breed.

In Galloway they spay more heifers than perhaps in all the island besides; and in this too their method is different from any other part I am acquainted with, for they do not castrate them until they are about a year old; whereas in every

* I was told by a Lincolnshire grazier, that a Lincolnshire bullock and a Galloway bullock, sent from the same village to Smithfield at the same time, were sold for the same money, though the Scot was only half the other's weight.

other

other place I know, the heifer-calves are spayed from one to three months old; and it is now generally admitted, as the safest practice, to castrate calves and lambs, male or female, while very young.

Their manner of rearing calves is still more singular:—The calves, from the time they are dropped till able to support themselves, are allowed to run with their dams, but are prevented from sucking, by means of a small piece of leather, with sharp spikes of iron fixed upon the outside, tied upon the upper part of the calf's nose, which, by pricking the cow every time the calf attempts to suck, prevents her from letting it, until the milk-maid comes, when she takes off the muzzle from the little animal's nose, and, while she strips two of the teats, the calf takes care to empty the other two; as soon as the maid has done, she fixes on the instrument again, but it is done in such a manner as not to hinder the calf from

feeding upon the grass, though it is not allowed to taste the milk until the girl returns to her milking. In some parts of Scotland the general practice is, to milk three times a day in Summer; but I do not recollect whether this is done in Galloway.

Though the generality of their cattle are polled, yet they have several with horns, which they say are a *bastard* or *mongrel* breed, by crossing with long-horned bulls from Westmoreland and Cumberland.—They prefer the polled ones, and of these the black or dark-brindled ones, to any other; and all allow them to be the original breed of the country.

The breeders in Galloway complain of their old breed being lost, or at least much worn out; but admitting their breed of cattle in some degree injured, yet there is little doubt, not only of its being recovered, but still more improved, when such a leading nobleman as Lord Sel-

Selkirk* is among the breeders.—Mr. Murray, of Broughton, and Mr. Heron, of Kirvochtree, have been long eminent in the breeding of Galloway cattle. Mr. Craik, Mr. Dalzell, and several others, have tried a cross from Mr. Bakewell's bulls; how far this has succeeded, I have not been able to learn: indeed I do not see how they can form a judgment themselves without a full trial. But I found that the generality of the breeders were against crossing with Mr. Bakewell's, or any other kind of cattle; believing that their real original polled breed, had already been injured by crossing with different kinds.

SUFFOLK DUNS,

so called, from their being the prevailing kind of neat cattle in the county of Suf-

* I am happy to find that his respectable son (Lord Daer) is pursuing the breeding of good stock, with zeal and judgment.

folk, and which some may think a distinct species; but I am inclined to believe them no more than a variety of the Galloway breed, which might easily take place, from the great connection that has long subsisted between the Scotch Galloway drovers of cattle, and the Suffolk and Norfolk feeders or graziers of them. Both kinds are in general polled; and though the Suffolks are almost all light Duns, while the others are of various colours, yet this might at first proceed from a partiality to that colour. But from whatever place or cause this variety took its rise, they are at present a very useful kind of little cattle, particularly for the dairy; and great numbers of them are employed in that line in some parts of Suffolk, where perhaps the best butter and the worst cheese in the kingdom are made. The cows give great quantities of milk. Mr. Young says, they give in common, 24 quarts a day, which is nearly equal to the best short-horned cows.—

The

The yearly produce of a cow, Mr. Young states to be—

	£.	s.	d.
3 Firkins of Butter at 31s.	4	16	0
¾ of a Wey of Cheese	1	4	0
A Hog	1	0	0
Calf	0	10	0
Total	£. 7	10	0

We find the cows of this kind, like all other deep milkers, very lean, very plain, and very big-bellied;—the weight of this breed of cattle is on an average about 50st.

The KYLOES

are still less in proportion to the polled cattle than they are to the long-horns: this breed are also covered with a long close coat of hair, like the polls and long-horns; and, like these, their beef is fine-grained, well flavoured, and mixed or marbled, but not so handsome on the outside of the beef when killed, being

not of so bright a colour, and often spotted with black, even upon the best parts, except when made very fat. When grazed they feed very readily; their weight in general being from 20 to 35st.; some particular ones reach to more than 40st*. The most prevalent colour is black, some are brindled or dun; but the breeders here, like those in Galloway, prefer the black ones.

These hardy animals are in possession of all that extensive and mountainous country, called the Highlands of Scot-

* A kyloe bred in Cantire, and fed by Mr. Spearman, of Rothley-Park, in Northumberland, was killed 22d July, 1790, and weighed as under:—

	st.	lb.
Two fore-quarters	43	12
hind ditto	37	8½
Weight of carcase	81	6½
Tallow	13	0
Hide	6	4
Total	100	10½

land,

land (together with the Western Isles), bounded on all sides by the Sea and the Grampian-Hills, the latter of which begin on the North side of the Frith of Clyde, and run Eastward into the Sea near Aberdeen.

All the Lowlands of Scotland, except Galloway, have a mixed breed of cattle; towards Cumberland, they are half long horns, half polls; on the borders of Northumberland, they are mixed with short-horns, until you reach near Tiviotdale, where they become altogether a coarse kind of short-horned, or what the Yorkshire jobbers call *runts*; except a few pretty good short-horned cattle, bred in that pleasant and fine country, the Tweed-side. The same kind of *runtish* coarse breed, continues all the way to the Frith of Forth.—Crossing this narrow sea into Fifeshire, you would at first imagine the Fife cattle a distinct breed, from their upright white horns, being exceedingly light-lyered,

and thin-thighed; but I am pretty clear it is only from their being more nearly allied to the kyloes, and consequently less of the coarse kind of short-horns in them.*—The cattle all along this coast continue to change more and more, growing still less, until, upon the edges of the mountains, they become quite of the kyloe kind; but still much inferior to that pure, unmixed, valuable breed of kyloes, which we meet with in the more Northern and Western Highlands and all the Isles, but particularly in the Isle of Skye, and that tract of country called Kintail. It is in these two districts that you meet with the native breed of kyloes; a hardy, industrious, and excel-

* I have lately been told that the Fifeshire cattle are in very great repute in the South of England, as good grazers, and bid fair to rival the Galloway cattle in Smithfield market.—May not this be owing to the Galloway cattle being injured by crossing with a coarse kind of long-horns, bred in the English borders; and, probably, the Fifeshire breeders of late paying more attention?

lent

lent breed of cattle, calculated in every respect to thrive in a cold, exposed, mountainous country, and better adapted to the cold regions where they are bred, than any other kind we are acquainted with.

These cattle are driven to the Southward in great numbers every Autumn; many into the Western districts of Yorkshire; but the greatest part are sent into Norfolk, Suffolk, Essex, and other parts of the South of England, where they are fatted, and either slaughtered at their home-markets, or sent to Smithfield.

The demand for kyloes into England is of vast importance to those nobility and gentry who have estates in the North of Scotland; as the most of their rents are paid in live cattle.

Admiral Sir John Lockhart Ross, and some other spirited gentlemen, have tried some crosses, &c. between long-horned bulls and the Isle of Skye cows. Whether this will answer the end desired or

not, time will shew; but whatever the result may be, there is certainly great merit in the attempt.

The ALDERNEY BREED

is only to be met with about the seats of our nobility and gentry, upon account of their giving exceeding rich milk, to support the luxury of the tea-table, &c. Indeed if it was not for the sake of method, and my believing them a distinct breed, I might have saved the trouble of naming them at all; as I imagine this breed too delicate and tender ever to be much attended to by our British farmers, because they are not able to bear the cold of this island, particularly the Northmost parts of it. They are very fine-boned in general, light-red or yellow in colour, and their beef generally yellow or very high coloured, though very fine in the grain, and well-flavoured.—They make themselves very fat; and

and none of them in the least subject to lyer, or black-flesh. I have seen some very useful cattle bred from a cross between an Alderney cow and a short-horned bull.

The WILD BREED,

from being untameable, can only be kept within walls or good fences; consequently very few of them are now to be met with, except in the parks of some gentlemen, who keep them for ornament, and as a curiosity; those I have seen are at Chillingham-Castle, in Northumberland, a seat belonging to the Earl of Tankerville. Their colour is invariably of a creamy white; muzzle black; the whole of the inside of the ear, and about one-third of the outside, from the tips downward, red; horns white, with black tips, very fine, and bent upwards; some of the bulls have a thin upright mane, about

about an inch and a half or two inches long. The weight of the oxen is from 35 to 45st. and the cows from 25 to 35st. the four quarters (14lb. to the stone).—The beef is finely marbled, and of excellent flavour.

From the nature of their pasture, and the frequent agitation they are put into by the curiosity of strangers, it is scarce to be expected they should get very fat; yet the six-years-old oxen are generally very good beef, from whence it may be fairly supposed that in proper situations they would feed well.

At the first appearance of any person they set off in full gallop, and, at the distance of about two hundred yards, make a wheel round and come boldly up again, tossing their heads in a menacing manner; on a sudden they make a full stop at the distance of forty or fifty yards, looking wildly at the object of their surprize, but upon the least motion being made, they all again turn round, and fly

fly off with equal speed, but not to the same distance, forming a shorter circle, and again returning with a bolder and more threatening aspect than before; they approach much nearer, probably within thirty yards, when they again make another stand, and again fly off: this they do several times, shortening their distance and advancing nearer and nearer till they come within such a short distance, that most people think it prudent to leave them, not choosing to provoke them further.

The mode of killing them was perhaps the only modern remains of the grandeur of ancient hunting.—On notice being given that a wild bull would be killed on a certain day, the inhabitants of the neighbourhood came mounted and armed with guns, &c. sometimes to the amount of an hundred horse, and four or five hundred foot, who stood upon walls or got into trees, while the horsemen rode off the bull from the rest of the herd until he stood at bay,

bay, when a marksman dismounted and shot. At some of these huntings twenty or thirty shots have been fired before he was subdued. On such occasions, the bleeding victim grew desperately furious, from the smarting of his wounds, and the shouts of savage joy that were echoing from every side. But from the number of accidents that happened, this dangerous mode has been little practised of late years, the park-keeper alone generally shooting them with a rifled gun at one shot.

When the cows calve, they hide their calves for a week or ten days in some sequestered situation, and go and suckle them two or three times a day. If any person come near the calves, they clap their heads close to the ground, and lie like an hare in form, to hide themselves; this is a proof of their native wildness, and is corroborated by the following circumstance that happened to the writer*

* Mr. Bailey, of Chillingham.

of

of this narrative, who found a hidden calf, two days old, very lean and very weak: on stroking its head it got up, pawed two or three times like an old bull, bellowed very loud, stepped back a few steps, and *bolted* at his legs with all its force; it then began to paw again, bellowed, stepped back, and bolted as before; but knowing its intention, and stepping aside, it missed him, fell, and was so very weak, that it could not rise, though it made several efforts:—but it had done enough:—the whole herd were alarmed, and, coming to its rescue, obliged him to retire; for the dams will allow no person to touch their calves, without attacking them with impetuous ferocity.

When a calf is intended to be castrated, the park-keeper marks the place where it is hid, and, when the herd are at a distance, takes an assistant with him on horseback; they tie a handkerchief round the calf's mouth to prevent its bellowing, and then

then perform the operation in the usual way, with as much expedition as possible. —When any one happens to be wounded, or is grown weak and feeble through age or sickness, the rest of the herd set upon it and gore it to death.

Having now gone through the descriptions and properties of the various breeds of cattle, which, I presume, are most worthy the attention of farmers, graziers, and breeders, I shall now offer a few

COMPARATIVE OBSERVATIONS:

in doing which, we shall begin with those two breeds of cattle, the *short-horns* and the *long-horns*, that are at present in possession of the best and greatest part of this island.

island.—These two rival breeds (between whom it has long been a dispute with the breeders of both which are the best and most advantageous) have been variously intermixed in different parts of Great Britain ; but it is the two unmixed distinct breeds that we now mean to compare, and, to the best of our knowledge, point out their different perfections and imperfections, and then leave the candid experienced reader to form his own judgment.

We have already observed, that the long-horns excel in the thickness and firm texture of the hide, in the length and closeness of the hair, in their beef being finer grained, and more mixed and marbled than that of the short-horns, in weighing more in proportion to their size, and in giving richer milk ; but they are inferior to the short-horns, in giving a less quantity of milk, in weighing less upon the whole, in affording less tallow when

killed, in being generally slower feeders; and in being coarser made, and more leathery or bullish in the under side of the neck. In few words, the long-horns excel in the hide, hair, and quality of the beef; the short-horns in the quantity of beef, tallow, and milk.—Each breed have long had, and probably may have, their particular advocates; but if I may hazard a conjecture, is it not probable that both kinds may have their particular advantages in different situations? Why not the thick, firm hides, and long close-set hair of the one kind, be a protection and security against those impetuous winds and heavy rains to which the West coast of this island is so subject; while the more regular seasons and mild climate upon the East coast, are more suitable to the constitutions of the short- horns?—When I say the long-horns excel the short-horns in the quality of the beef, I mean, that preference is only due to the particular variety of long-

long-horns taken notice of before, as selected, improved, and recommended by that attentive breeder, Mr. Bakewell; for as to the long-horned breed in common, I am inclined to think their beef rather inferior, than superior, to that of the generality of short-horns; and there is little doubt but a breed of short-horned cattle might be selected, *equal*, if not *superior*, to even that very kindly-fleshed sort of Mr. Bakewell's, provided any able breeder, or body of breeders, would pay as much attention to these, as Mr. Bakewell and his neighbours have done to the long-horns. But it has hitherto been the misfortune of the short-horned breeders to pursue the largest and biggest boned ones for the best, without considering that those are the best that pay the most money for a given quantity of food. However, the ideas of our short-horned breeders being now more enlarged, and their minds more open to conviction, we may hope in a few years

to see great improvements made in that breed of cattle.*

But notwithstanding these two breeds have hitherto been in possession of the best part of the island, yet I am inclined to think that the Galloway cattle, and even the Kyloes, might be bred with advantage in many situations, so as to be more profitable than either the short-horns or the long-horns: I have a very high opinion of both these breeds of cattle, as true quick feeders, and being kindly-fleshed, or excellent eating beef, which character they have established in the first market in the island.

My readers will in general agree with me, that Kyloes are better adapted to cold, exposed, heathy mountains, than any

* I am glad to find my hopes have been well founded; because, since the publication of the first edition of this work, a very rapid improvement has taken place in the breeding of short-horned cattle, so that in a few years I have reason to think they will surpass their rivals, the long-horns.

other

other breed we have. I have before hinted, that particular breeds are probably best adapted to particular situations, and would recommend to breeders of *cattle* to find out which breed is the most profitable and best suited to their situations, and endeavour to improve that breed to the utmost, rather than try to unite the particular qualities of two or more distinct breeds by crossing, which is a precarious practice; for we generally find the produce inherit the coarseness of both breeds, and rarely attain the good properties which the pure distinct breeds individually possess.

Drawing Oxen.

I am sorry to observe, that there are not so many steers kept now as used to be formerly. Two reasons may be assigned for this:—First, lands are now rented so high, that farmers cannot afford to

keep steers to the age of oxen without working them; which brings me to my second reason, viz. that fewer oxen are used in the draught now than formerly. A remedy for this complaint perhaps may not be so readily pointed out; because, though a few people are convinced of the utility of drawing oxen in many cases, yet the generality of farmers will be very unwilling to be persuaded to this, because oxen are slower in their motion than horses, without adverting to the advantages attending the oxen in the feeding, shoeing, harness, &c.; but above all, the conclusion (between an ox fatted for the shambles, after working three or four years, or indeed a lean ox sold to feed, and a horse sold to the dog-kennel), is so exceedingly striking, that I presume most people, when they reflect upon this very important matter, will agree to the drawing of oxen in every kind of work wherein they *suit*; use the expression *suit*, because

because I would not be understood to think, as some people do, that oxen will answer as well as horses in every kind of farming-work: but I apprehend that oxen will do several kinds of home-work (such as ploughing, leading dung, corn, &c.) equally as well as horses. I advance this opinion on several years' experience,* and believe that most farmers might use some oxen along with their horses, but would in general recommend the oxen and horses to be in separate draughts, because the difference of the step is so very unequal.

Much more might be said upon this important subject, but I will at present

* The author and his brother, in partnership, at this time employ about 150 oxen in the draught, which is mentioned here as a proof that they approve of drawing oxen in many cases, after more than thirty years' experience; they use them in carts singly, and two in a plough, with cords, without a driver, where they go equally as well as two horses, though not quite so swift: and I am happy to add, that the working of oxen is becoming more general every day, as many of our neighbours are following this example.

only add, that I heartily wish our legislature would take this matter into consideration, and give premiums to encourage the rearing and drawing of oxen, and also to promote the breeding of the best kinds of stock, as there is little doubt but it would have most beneficial effects. It is true that many of our agricultural societies do give premiums for the above purposes; but these, though highly meritorious, are only partial, and confined to certain districts, while the influence of the other would be general and extensive.

The North part of Durham, all Northumberland, and a few places in the South of Scotland, are almost the only places I know where any number of oxen are now kept to age. Part of these are bought by the drovers to go South for grazing, the rest are fed at home to supply the coal trade.—Oxen are also used for the draught in Sussex, Herefordshire, Devonshire, and some of the other Western counties; but those

those of Lancashire, Yorkshire, &c. are now mostly sold at three, four, or at most, five years old.

Great Milkers, not quick feeders.

I apprehend one great mistake that breeders in general have run into, especially in breeding neat cattle, has been, endeavouring to unite great milkers with quick feeders. I am inclined to think this cannot be done; for, wherever we attempt both, we are sure to get neither in any perfection: in proportion as we gain the one, in the same proportion we lose the other; the more milk, the less beef; and the more we pursue beef, the less milk we get. In truth, they seem to be two different varieties of the same kind, for very different uses; and if so, they ought most certainly to be differently pursued by those that employ them. If the dairy-man wants milk, let him pur-

sue the milking tribe; let him have both bull and cows of the best and greatest milking family he can find: on the contrary, he that wants feeding or grazing cattle, let him procure a bull and cows of that sort which feed the quickest, wherever they are to be found. By pursuing too many objects at once, we are apt to lose sight of the principal; and, by aiming at too much, we often lose all: let us only keep to distinct sorts, and we will obtain the prize in due time. I apprehend it has been much owing to the mixing of breeds and improper crossings, that kept us so long from distinguishing the most valuable kinds.

I do not suppose this doctrine to be so new, as it has been unattended to, and not properly considered; for I have heard many people say, 'How should that cow 'be a good milker; she runs too much to 'flesh?' And so it is, while all the great milkers are invariably thin. The former are generally high-sided, light-bellied, covered

covered in all their fatting points, in proportion as they recede from the great milking tribe, though kept on middling fare; while the latter will be lean upon their backs, flat-sided, big-bellied, poor, and ill looking, though much better kept than the others.

I own there is a middling kind of cows which give a tolerable quantity of milk, and also keep in pretty good condition; but this, I apprehend, does not at all militate against the above reasoning, because, still those that incline the most to flesh, invariably give the least milk, and *vice versa*: and though many of the middling cows will make very fat when they are dried, or the milk taken from them, yet will not get so quickly fat, nor so ripe, as those which give less milk, and are inclined more to fatten while in a milking state.

Irish

Irish Cattle:

I have hitherto taken no notice of the Irish cattle; though it behoves the breeders in that island, above all others in the British dominions, to pay attention to the breeding of cattle, as beef is the staple commodity of the island; and however Great Britain may have suffered, it is highly probable that the Irish have been benefited by the high price their beef bore during the war with America, and indeed every war.—I take the Irish cattle to be a mixed breed between the long-horns and the Welch or Scotch, but most inclined to the long-horns, though of a less weight than those in England. It is wonderful to consider the numbers of cattle that fertile island produces; I have seen at one fair at Ballinasloe, in the county of Roscommon, I believe, thirty-five thousand head of cattle shewn, and half of these fat ones,

all bought up for the slaughter at Cork.—Of late years several of the Irish breeders have bought long-horned bulls and heifers at very high prices from Lancashire, Leicestershire, Warwickshire, &c. particularly the Mr. Fenches, and other spirited breeders from Roscommon and different parts of the west of Ireland, which have been of very great advantage in improving their breed.—I saw some of the cattle descended from these crosses shewn at Ballinasloe-fair, which were greatly superior to any others shewn there.



It may not be thought amiss, I presume, before this article is concluded, to give a description of the ox which the ancients judged most proper for labour, and of the bull and cow which they judged most proper for breeding.

Varro

Varro says, "The ox should have spacious horns, rather black than otherwise, a broad forehead, wide nostrils, a broad chest, and thick dewlap."—In another passage he is more particular in his description of this kind of cattle; he says, "Persons that buy them should take care that they be well made, all their members complete; long and deep bodied, with black horns, broad foreheads, large and black eyes, hairy ears, close-set jaws, flat noses, and wide nostrils; blackish lips, thick and long necks, hanging-down dewlaps, broad chests, round-ribbed, thick-shouldered, not humped, but the backbone gently declining downwards; round in the hips, with tails hanging down to their heels, and the lower part of them very rough with hair; legs rather short, the knee-joints straight, a little protuberant, and at a proper distance from one another; the feet not broad, nor such as clank when going; the divisions of the hoofs not wide,

wide, and the hoofs themselves equal and smooth; the hide, to the touch, not rough or hard; the strongest of which is the hide with the black colour, the second that with the red, the third that with the dun, and the fourth that with the white—for cattle of this colour are the tenderest, those of the first the hardiest; of the two middle ones, the former is better than the latter, and both these kinds are better than either the black or the white."

Columella informs us, that he takes his description of the labouring ox from Mago, the Carthaginian, and he gives it as follows: "The oxen we buy should be young, square, with large members, and lofty horns, black and strong; the forehead broad and rough, hairy ears, black eyes and lips, flat and turned-up noses, with wide nostrils; a long and brawny neck, large dewlaps, and reaching almost to their knees; the chest broad, large shoulders, a large

and

and protuberant belly, sides well stretched out, broad flanks, the back straight and even, or a little declining; round hips, legs compact and straight, but rather short than long; the knee-joints well set, large hoofs, very long tails and hairy; the hairs upon the whole body, thick and short; the colour red, or dark brown; the whole body very soft to the touch."

Palladius expresses himself in this manner: "These marks are to be looked for in oxen, whether we take them from our own herd or that of another,—that they be young, with square and large members, and a compact body, the muscles and sinews every-where standing out, large ears, a broad and rough forehead, black eyes and lips, horns strong and curved, without any deformity in the bending; a flat and turned-up nose, with wide nostrils; the neck brawny and compact, large dewlap hanging down to the knees; broad chest, large shoulders, belly rather protuberant, sides

stretched

stretched out, broad flanks, the back straight and even, legs firm, nervous, and short; large hoofs, tail long and hairy; the hair upon the whole body thick and short, chiefly of a red or dark-brown colour."

The description that Varro gives is intended for the kind he treats of in general; that which is given by Columella and Palladius is intended for the labouring ox in particular.—Both these authors give likewise a description of the bull and cow most proper for breeding.

"In my opinion," says Columella, "those bulls are chiefly approved of which have very large members, placid manners, middle age; almost all the other things we should observe in them which we do in choosing oxen, for there is no difference between a good bull and an ox, except that the bull has a stern countenance, a brisker look,

look, shorter horns, a more brawny neck, so great indeed, as to be a large part of his body, and a belly a little more confined."

Palladius expresses himself much to the same purpose: he says, "They should be tall, with huge members, of a middle age, rather young than old, of a stern countenance, small horns, a brawny and vast neck, and a confined belly."

"The cows," says Columella, "most approved of, are of a tall make, long, with a very large belly, very broad forehead, eyes black and open, horns graceful, smooth, and black hairy ears, straight jaws, very large dewlap and tail, moderate hoofs and legs."

"Likewise," says Palladius, "now is the time to provide cows; and we ought to choose them of a very tall make, long-bodied, with a capacious and large belly, broad forehead, eyes large and black, comely horns, and chiefly black, hairy ears, dewlap and tail very large, short hoofs, and dark and small legs."

Virgil gives a description of the cow only, alledging that the breeders, both of horses and cows, should attend principally to the make of the female. "If any one," says he, "fond of the prize at the Olympic Games, breed horses, if any one breeds stout bullocks for the plough, he chiefly attends to the make of the mother: the best shaped cow has a stern countenance, a large forehead, and much of a neck, with a dewlap hanging down from the chin to the knees; sides very long, all parts large, even the feet not small, and the ears hairy under the curved horns: nor do I think it a great defect to be spotted with white, to refuse the yoke, even sometimes to be rude with her horn; nor that she has the resemblance of a bull in her countenance, that she is lofty, and, in stepping, sweeps the ground with her tail."

The rustic writers are very particular in their directions about buying cattle;

among these there is one mentioned by almost all of them; it is this, that the ground to which they are brought, be of the same kind with that on which they are bred.

Varro says, "Old oxen ought not to be brought from champaign lands, to hard and mountainous countries, nor contrariwise, if it is possible to avoid it."

Columella says, "Cattle bred upon the ground are much better than foreigners, for those are not put to the trial with a change either of water, or food, or air, nor incommoded with the customs and situation of the country, as these are, that are brought from plain and champaign lands to rough and mountainous, or from mountainous lands to champaign; for this reason, when we are obliged to bring oxen from a place at a distance, care must be taken to bring them from such grounds as our own."

Palladius,

Palladius, to the same purpose, says, "It is better to buy oxen from the neighbouring grounds, because these are put to no trial by a change of ground or air; or, if this cannot be done, to bring them from like grounds to like."

SHEEP,

WE may venture to say, are of the greatest importance to this nation, most worthy the constant attention of the legislature, and the particular consideration of almost every farmer in Great Britain; for we have very few farms in this island, whereon they may not be kept to advantage, either for breeding, for grazing, or for feeding fat lambs.—Mr. Pope somewhere says, "The fur that warms the monarch warm'd a bear." But the wool of these valuable creatures warms every class of people, from the king to the beggar;

beggar; employ thousands in the manufacturing of their fleeces, and whole fleets in the exportation. Every individual is interested in this great staple commodity, from the lord who sits upon a woolsack, to the industrious poor who cheerfully card and spin; or, as the old Scotch song has it,

——— "The bonny harmless sheep
"That feed on mountains stay and steep,
"Bleating sweetly as they go,
"Through the Winter's frost and snow:
"Hart, and Hind, and Fallow-Deer,
"Not by half, so useful are.
"Fra kings to him that hads the plow,
"Are all oblig'd to tarry-woo."

The numberless flocks that are everywhere spread over the face of this island, from the Land's-end to Johnny Groat's House, are exceedingly intermixed and varied.—Nevertheless, the original distinct breeds, I apprehend, may be classed as in the annexed synopsis.

A SYNOPSIS

OF THE

DIFFERENT BREEDS of SHEEP in GREAT BRITAIN.

					Average weight of fleece per lb.	Price of wool per lb.	Average weight of wethers per quarter.	Years old when killed.
						s. d.	lb.	
1	Dishley				8	0 10	25	2
2	Lincolnshire	no horns	white faces and legs	long wool	11	0 10	25	3
3	Tees-Water				9	0 10	30	2
4	Dartmore Natts				9	0 8	30	2½
5	Exmoor	horned	ditto	ditto	6	0 8	16	2½
6	Dorsetshire	small horns	ditto	fine short wool	3½	1 2	18	3½
7	Herefordshire	no horns	ditto	very fine short wool	2	2 9	14	4½
8	South down	ditto	grey faces and legs	ditto	2½	2 0	18	2
9	Norfolk	large horns	black faces and legs	fine short wool	2	1 5	18	3½
10	Heath	ditto	ditto	coarse long wool	3½	0 6	15	4½
11	Herdwick	no horns	speckled faces and legs	short wool	2	0 6	10	4½
12	Cheviot	ditto	white faces and legs	fine short wool	3	0 11	16	4½
13	Dunfaced	ditto	dun faces and legs	ditto	1½	3 0	7	4½
14	Shetland	ditto	colours various	fine cottony wool	1½	3 0	8	4½

In regard to these different breeds of sheep, we shall pursue pretty nearly the same method we did with the cattle, after first giving

A DESCRIPTION OF THE RAM.

His head should be fine and small, his nostrils wide and expanded, his eyes prominent, and rather bold or daring, ears thin, his collar full from his breast and shoulders, but tapering gradually all the way to where the neck and head join, which should be very fine and graceful, being perfectly free from any coarse leather hanging down; the shoulders broad and full, which must at the same time join so easy to the collar forward, and chine backward, as to leave not the least hollow in either place; the mutton upon his arm, or fore-thigh, must come quite to the knee; his legs upright, with a clean fine bone, being equally clear from superfluous

skin and coarse hairy wool from the knee and hough downwards; the breast broad and well forward, which will keep his fore-legs at a proper wideness; his girth or chest full and deep, and instead of a hollow behind the shoulders, that part by some called the fore-flank, should be quite full; the back and loins broad, flat, and straight, from which the ribs must rise with a fine circular arch; his belly straight, the quarters long and full, with the mutton quite down to the hough, which should neither stand in nor out; his twist* deep, wide, and full, which, with the broad breast, will keep his four legs open and upright; the whole body covered with a thin pelt, and that with fine, bright, soft wool.

The nearer any breed of sheep comes up to the above description, the nearer they approach towards excellence of form; and there is little doubt but if the same attention and pains were taken to improve

* Twist—the junction of the inside of the thighs.

any particular breed that has been taken with a certain variety of the Lincolnshire, the same consequences would be obtained. The variety here meant, is that first selected by Mr. Robert Bakewell, of Dishley, in Leicestershire, who, with singular discernment and great attention, has raised a breed of sheep unknown in any former period; and which surpass all other breeds in their propensity to get fat, and in paying the most money for the quantity of food consumed.—From the residence of the first selector, this variety is now generally known by the name of

The DISHLEY BREED.

They are peculiarly distinguished from other long-woolled breeds, by their fine lively eyes, clean heads, straight, broad, flat backs, round (barrel-like) bodies, very fine small bones, thin pelts, and inclination to make fat at an early age; this last property

property is most probably owing to the before specified qualities; and which, from long experience and observation, there is reason to believe, extends through every species of domestic animals. The Dishley breed is not only peculiar for its mutton being fat, but also for the fineness of the grain and superior flavour, above all other large long-woolled sheep, so as to fetch nearly as good a price, in many markets, as the mutton of the small Highland, and short-woolled breeds.

The weight of the carcase in general is—

Ewes, 3 or 4 years old, from 18lb. to 26lb. a quarter.
Wethers, 2 years old ——— 20lb. to 30lb. a quarter.

The wool, upon an average, 8lb. a fleece.—The length from 6 to 14 inches; sold in 1792, at 10d. per lb.

There are two reasons for killing the wethers at two years old:—First, they leave the most profit; and, Secondly, if kept longer, they get too fat for genteel tables.

tables.—To people who are strangers to these sheep, this may appear rather problematical; the following facts may remove their doubts:—A three-years-old wether, belonging to the author, was killed at Alnwick, by Mr. James Bolton, the 2d of October, 1787, which measured seven inches and one-eighth of solid fat, on the ribs, cut straight through without any slope, and his back from head to tail, was like the fattest bacon. It is very common for two-years-old wethers to cut four inches thick of fat on the ribs, and from two to three inches all down the back: even ewes of this kind, which have bred and suckled lambs till July, when killed about the Christmas following, will frequently measure four or five inches thick of fat on the sides, and two or three inches down the back, all the way from head to tail; and though this breed are not eminent for much tallow, yet ewes under such circumstances, generally produce from 18

to 24lb. of tallow each. To weak appetites it is not so inviting as the leaner mutton, but it finds a ready market amongst the manufacturing and laborious part of the community, whom necessity has taught to lay out their money to the best advantage, and who have found by experience, that a pound of bone is not so nutritive as a pound of mutton; and of course they always endeavour to buy that which has the least bone and most flesh.*

The weight of wool clipped from these sheep is not so great as from some other long-woolled kinds; but the wool of this breed hath hitherto been only a secondary consideration; the *quantity* and *quality* of the mutton obtained at the *least expense of food*, was the great object of the first

* I am well informed that when the laborious class find this mutton too fat, they cut off a part of the fattest, with which they make suet-dumplins, or bread-paste with it for pies, &c. and not unfrequently make sea or boiled pies of the fattest parts.

improver;

improver;—this point gained, a new field opens to the experimental rural philosopher, to cover these good carcases with the most valuable fleeces.

This improved breed is making its way very rapidly into all parts of the kingdom, by the practice of hiring tups; the price of which, for the use of one season only, is astonishing; and to those who do not know with what eargerness this breed is sought after (by all who have tried them), may seem incredible; yet it is a fact, that Mr. Bakewell has let tups, for one season only, for four hundred guineas each, and taken in ewes to be tupped at ten guineas each (80 from two persons, and 40 of his own), makes the sum of twelve hundred guineas for one tup in one season: besides these he let several, every year, at two and three hundred guineas each.

Our mode of management of this breed is as follows:—The ewes generally lamb in March, when we give them a

few

few turnips to increase their milk; the latter end of June or beginning of July, the lambs are weaned, and sent to middling pastures; the ewes are milked two or three times to ease their udders, and such as are not meant to be continued for breeding, are culled out and put to clover: when this fails, they get turnips, and are sold about Christmas, very fat, to the butchers; the price from 34s. to 40s. per head.

The lambs, after being weaned, take the name of *hogs*; they are generally put to turnips the beginning of November,* and continue at them till the middle of April or beginning of May, when the wether-hogs are put upon good pasture, or second year's clover. The second Winter they have turnips, till the clover is sufficiently grown to receive them, which is generally about the mid-

* As we find it prevents a disorder called the black-water.

dle

dle of April. They are clipped about the middle of May, and generally all sold by the middle or end of June.—Morpeth is our best market; where the two-shear wethers have been sold, for the last three years, from 40s. to 50s. per head.

We generally reckon one-third of the ewes to have two lambs each; that is, every 60 ewes to have 80 lambs.—They are put to the tup, so as to have lambs at two years old, and kept for breeding until three or four years old, except such as are of particular good forms, or have other valuable properties, these we keep as long as ever they will breed. Such as are defective in shape, suspected of being slow feeders, or other unprofitable qualities, we never put to the tup, or attempt to breed from them.

The LINCOLNSHIRE BREED,

have no horns, white faces, long, thin, and weak carcases; the ewes weighing from

from 14 to 20lb. per quarter; the three-years old wethers, from 20 to 30lb. per quarter; have thick, rough, white legs, bones large, pelts thick, and wool long, from 10 to 18 inches, weighing from 8 to 14lb. per fleece, sold in 1792 for 10d. per lb. and covering a slow-feeding, coarse-grained carcase of mutton:

This breed is most prevalent in Lincolnshire; which fertile district has the same right to be called the mother-county, or country, for long-woolled sheep, that Lancashire has to long-horned cattle: but the comparison may be carried further; for as this last-named county, from paying too much attention to big bones, hides, and horns, suffered the Leicestershire and Warwickshire breeders to steal from them their valuable breed above referred to, before they were well aware of it; so also the Lincolnshire breeders, by too great a fondness for heavy wool and large-boned sheep, suffered the same discerning set of breeders from

from the midland counties, to rob them of a much more valuable breed of sheep, which they undoubtedly were first in possession of, before they were sufficiently sensible of the value of them.

It is true, that the Lincolnshire breeders can justly boast of clipping the greatest weight of wool from a given number of sheep, of any other set of people in this island: but then this very heavy wool seldom or never fails to cover a very coarse-grained carcase of mutton; a kind of mutton well known for its coarse grain and big bones in the London markets, which not only sells for less money by the pound in the metropolis than any other kind of mutton, but in every market in the island, wherever it happens to be exposed to sale*, and has brought an odium upon the

* On asking a butcher's wife at Bury, in Suffolk, how she sold mutton? *Five-pence a pound, Sir!* answered she smartly.—And pray, replied I (rather surprised at the

the large mutton which the best kinds do not deserve.

Yet this is not the worst of it; for this kind of sheep cannot be made fat in a reasonable time, in any part of the island except Romney-Marsh, their own rich marshes in Lincolnshire, or some very rich grazing grounds. Perhaps this is the best reason we can give for a set of sensible men so long adhering to this coarse grained, slow-feeding tribe.—Indeed the prodigious weight of wool which is annually shorn from these sheep, is an inducement to the marsh-men to give great prices to the breeders for their hogs or hogrils (as they

high price), have you no mutton below five-pence? O yes, Sir! rejoins the honest woman, "*plenty of Lincolnshires, at four-pence; but we do not account it mutton, when compared with our Norfolk or Suffolk mutton.*"—And if I may be allowed to give my opinion, they would neither of them be accounted mutton in many markets, even further North in this island: the Lincolnshire, on account of its coarseness; the other, on account of the thinness; and both, for having too much bone in proportion to the meat.

are

are there called), where though they must be kept two years more before they get them fit for market, yet in the mean time they get three clips of wool from them, which alone pays them well in those rich marshes.

An eminent breeder in Lincolnshire has favoured me with the following particulars, in a letter dated January, 1793.

"The average price of hogs, bought in at Lincoln and Boston fairs, is about 26*s.* per head; if these are kept until *three-shear*, the average weight of the wool will be about 12 lb. a fleece; but when they breed their own stock, and have nearly an equal number of ewes, hogs, and wethers, the average weight of the fleece is about 9 lb.—Very few *(if any)* of the Lincolnshire breed, are ready for market at *two-shear*; and I am credibly informed, that several are under the necessity of *wintering* some of their *three-shears*, before they are

marketable. I am just returned from London, where I find the average price of three-shear *Marsh sheep* not to exceed 35s. —A friend, who buys a great number every Michaelmas of *three-shear Marsh sheep* to put to turnips in the vicinity of Wakefield and Rotheram, assures me, that 35s. is the full average for picking the best lots; and an extensive sheep farmer near Boston, informs me, his ewes that missed lamb last year, were sold in Smithfield (from August to Michaelmas) at about 21s. round, and that the highest price he got for his *three-shear wethers* was 36s. and several lots sold under 30s.—His flock are considered of the best Lincolnshire breed.

"Some of my neighbours, who have been in the habit of using rams of the Dishley breed, have, for the three last years, sold their *two-shear* sheep in *May (clipped)* for 42s. a head round; another sold 300 *two-shear* sheep at Michaelmas, in one lot, for 43s. a head, and left only

26 culls.—The average weight of the wool of this flock is 9 lb. a fleece."

From these data a fair comparison may be made.

Pure Lincolnshire breed, fold at *three-shear*,

	£.	s.	d.
Three fleeces of wool, 33 lb. at 10d. per lb.	1	7	6
Sold at Michaelmas, three-shear, for	1	15	6
Divide by	3) 3	3	0
Gives the yearly profit	1	1	0

Crossed with the Dishley breed, sold at *two-shear*,

	£.	s.	d.
Two fleeces of wool, 18 lb. at 10d.	0	15	0
Sold at Michaelmas, two-shear, for	2	3	0
Divide by	2) 2	18	0
Gives the yearly profit	1	9	0

From the above statement it appears,

there is a profit of 8s. a head in favour of the latter; and, supposing only three sheep to be depastured on an acre, the difference will be 1l. 4s. an acre; but, on the rich marshes and best grazing grounds, the difference will be considerably more.

However, I am very glad to find, that the prejudices of the Lincolnshire breeders are now giving way to their better-informed reason, as many of the great tup-breeders in Lincolnshire are now hiring and buying rams from the midland counties; which is certainly the best, readiest, and only method to recover that valuable breed of sheep (of which they were first in possession), and of which they, of any other county of Great Britain, can make the most advantage, from having the greatest quantity of rich sheep pasturage.

After what has been said, will it not appear very extraordinary, that not only the midland counties, but Yorkshire, Durham,

ham, and Northumberland, can send their long-woolled breed of sheep to market at two years old, fatter in general than Lincolnshire can at three? It is a matter of fact, however, and I have no doubt of clearing it up to the satisfaction of my unprejudiced readers in a few words.

The rich fatting marshes in Lincolnshire are, beyond any other county I know of in the island, best adapted to the growing and forcing of long heavy wool. This, with the high price that kind of wool had given, previous to the American war, very probably induced the sheep breeders of that county to pursue it so ardently in preference to every other requisite, that they neglected the form of the carcase and inclination to make readily fat; *essentials*, that the other sheep-breeding counties were under a necessity of attending to, otherwise they could not have got them made fat in proper time, from their land not being in general near so rich as the Lincolnshire marshes. In

short, the Lincolnshire breeders, by running so much upon wool and large bones, had got their sheep, like their black horses, two great ends, a long thin weak middle; and lost the thick firm barrel-like carcase, broad flat back, fine clean small bone, and inclination to make fat;—those distinguishing characteristics of the best sheep, and for which the Dishley breed is so eminently conspicuous.

The Lincolnshire sheep are in general a very tender kind, and unfit for most other counties. Whatever crosses I have seen from Lincolnshire tups, in general did harm; while, on the contrary, the Dishley ones did great service. It is true, the former mostly improved the wool in weight, but constantly injured the carcase in form: the sheep were longer in making fat, and the mutton worse in quality.

It is necessary to observe, that though we give the honour of the heavy-woolled sheep's

sheep's origin to Lincolnshire, yet I look upon those to be only variations of the same breed, which are spread through most of our midland counties, particularly Marshland in Norfolk, the Isle of Ely, Northamptonshire, Rutlandshire, Leicestershire, Warwickshire, part of Oxfordshire, Gloucestershire, Staffordshire, Derbyshire, Nottinghamshire, and the South parts of Yorkshire, with all the Yorkshire wolds: but when we come North towards the river Tees, which divides Yorkshire from the county of Durham, we there find that largest breed of sheep in this island, always called

The TEES-WATER BREED.

This kind differs from the Lincolnshire, in their wool not being so long and heavy, in standing upon higher, though finer-boned legs, yet supporting a thicker, firmer, heavier

heavier carcase, much wider upon their backs and sides, and in affording a fatter and finer-grained carcase of mutton. The two-years-old wethers weighing from 25lb. to 35 lb. per quarter; some particular ones at four years old, have been fed to 55 lb. and upwards.*

There is little doubt but the Tees-water sheep were originally bred from the same stock as the Lincolnshire; but by attending to size, rather than wool, and constantly pursuing that object, they have become a different variety of the same original breed.

This largest kind of sheep is not adapted to live in numerous flocks, or upon bare pastures; they require good ground,

* Mr. Thomas Hutchinson, of Stockton, an eminent breeder and grazier, had a wether sheep which was killed at Darlington about Christmas, 1779.—The four quarters weighed 17st. 11lb. at 14lb. to the stone, or 6z lb. 4 oz. per quarter, with 17lb. of tallow (*after leaving all they could in the loins*), which is the greatest weight, by several pounds per quarter, I ever heard of a sheep weighing.—N. B. He was of the true old Tees-water breed.

depasturing

depasturing very few together, or in small parcels, and great indulgence in winter. Accordingly, we find in that fine tract of country by the Tees, where these sheep are principally kept, the land is in general good, well sheltered, and cut into small inclosures, where they keep a very small number in the same field, allow them to go to a hay-stack all the winter, or to hecks or sheep-racks in the field, and generally give the ewes corn, previous to, and for some time after, their lambing.

The ewes of this breed generally bring two lambs each, and sometimes three: There are instances of even four or five, as was the case with Mr. Edward Eddison's ewe, which, when two years old,

In 1772,	brought him	4 lambs.
In 1773,	- - -	5
In 1774,	- - -	2
In 1775,	- - -	5
In 1776,	- - -	2
In 1777,	- - -	2

N. B. The

N. B. The first nine lambs were lambed within eleven months.

This breed is at present rarely to be found *pure*, except in the possession of some old breeders; for whoever has made an experiment with the Dishley breed, find, that though their fleeces are not so heavy as the large old breed, yet they obtain more wool from a given quantity of ground, by their being enabled to depasture more sheep on the same extent of surface, and which get much fatter in the same time, and produce more pounds of mutton, and more pounds of wool from an acre, though much less in size: in short, *Profit* has overcome *Prejudice*, and very few flocks are now to be found in this district that have not been crossed, more or less, with the Dishley blood.

The

The DEVONSHIRE NATS

have no horns, white faces and legs, thick necks, backs narrow, and back-bone high, the sides good, legs short, and the bones large.

The average weight of ewes, ... 20lb. per quarter
Ditto of 2½-years-old wethers, ... 30lb. ditto.

The average weight of the wool is 9lb. a fleece.
And sold in 1792 for 8d. per pound.

Some of the best farmers are sensible of the superiority of the Dishley breed, and, last year, paid 80 guineas for a ram of this kind, which I have no doubt, they will find of great advantage.—In this county we also find a small breed of long-woolled sheep, known here by the name of

EXMOOR SHEEP;

so called, from being chiefly bred upon, and in the vicinity of, a moor of that name

name, in the Northern extremity of Devonshire, and western part of Somersetshire.—They are horned, have white faces and legs, and peculiarly delicate in bone, neck, and head;—the form of the carcase not good, being narrow and flat-sided. The weight of a 2½-years-old wether, from 15lb. to 18lb. per quarter, and the weight of the fleece 6lb.

The lambs are sometimes dropped without horns, but these they do not keep for breeders, from an absurd idea, that they are tenderer than those that have horns.

It is also common to send the ewes to Exmoor for three or four months in the Summer, while the food lasts and the weather permits: for this they pay 5d. per head: and it is a general remark, that if the lambs did not suck upon the moor, to give them a "*Layer*," that they would never stay in hogs or old sheep.—This kind of instinct is not peculiar to this breed;

breed; we believe it is common to all sheep, to prefer rich and luxuriant pastures to a bare-eat, wintery, heathy moor.

The DORSETSHIRE BREED

are mostly horned, white faced, stand upon high, small white legs, are long and thin in the carcase.—The 3½-years old wethers weigh from 16lb. to 20lb. a quarter, produce fine short wool, from 3lb. to 4lb. a fleece, sold 1792 for 1s. 2d. per lb. Many have no wool on their bellies, especially in Wiltshire; the mutton is fine grained, and well flavoured.

This breed are said to bear lambs twice yearly; but I am inclined to believe this is a mistake; for admitting that they may bring lambs twice in one particular year, yet they cannot well do it the next year, or for a succession of years; or at least, if they

they suckle their lambs, I think they cannot: because, when it is considered that a ewe goes with lamb twenty-one weeks, she must, consequently, have only ten weeks to suckle or feed her two different breeds, before she takes the ram again, which will scarce suffice.* But the peculiar property of this curious breed of sheep, and what makes them so exceedingly convenient and advantageous to breed from, is, that you can have them to lamb at whatever season of the year you chuse so as to have that particular kind of fat lamb, called house-lamb, which is so early found at the tables of the nobility and gentry, and even among our tradesmen

* Since I wrote the above, I have been informed by a correspondent, that the Dorsetshire ewes are capable of bringing lambs twice a year; because my friend tells me, from a peculiarity in their constitution, they will take the ram two days after lambing, but do not conceive; but eight or ten days after they have a second embrace, when they generally prove with lamb, notwithstanding they give suck at the same time.

in

in these luxurious times, and which are brought to London market by Christmas, or sooner if wanted, and after that a constant and regular supply is kept up all the Winter. At their first appearance they are frequently sold for half-a guinea, fifteen shillings, and sometimes more, per quarter; from which time they lower gradually in price, until the Spring affords plenty. The lambs are imprisoned in little dark cabins, where they never see the light, except when the shepherd suckles them upon the ewes.—The ewes are fed with oil-cake, hay, corn, turnips, cabbages, or any other green food which that season affords; these are given them in an inclosure contiguous to the lamb apartment, where, at proper times, the attendant brings the nurses, and, while the lambs suck, their lodgings are made perfectly clean and littered with fresh straw. Vast attention is paid to this, for very much depends upon cleanliness. Thus are in-

vention and industry exerted to the utmost to supply the wants of luxury.

It used to be said some years ago, that this most singular breed of sheep would not bring lambs so early, except in the southern parts of England, and that it was much owing to a particular mode of treatment, practised by the shepherds and breeders in Dorsetshire and the neighbouring counties, such as heating the ewes by driving, &c. and then turning the rams to them.—Others again assert, that it was owing to the particular herbage produced from the Dorsetshire downs. But these imaginary notions are now all exploded, because it is well known that York, Durham, Newcastle, and even Edinburgh, are of late years supplied with Christmas house-lamb from the Dorsetshire sheep, without any particular arts being made use of.

I take the Wiltshire sheep to be only a variety of this breed, which, by attending to size, have got considerably more

weight, viz. from 20lb. to 28lb. a quarter.—These, in general, have no wool upon their bellies, which gives them a very uncouth appearance.

The variations of this breed are spread through many of the southern counties, as well as many in the West, viz. Gloucestershire, Worcestershire, Herefordshire, &c. though some of them are very different from the Dorsetshire, yet they, are I apprehend, only variations of this breed, by crossing with different tups, and which variations continue Northward until they are lost amongst those of the Lincolnshire breed.

They have a particular breed of sheep, mostly horned, in that Western part of Yorkshire called Craven and Wensleydale, and Silverdale in Westmoreland. I know not which breed to annex them to, but think they have a good deal of the Dorsetshire in them, especially their horns and white faces, probably produced by crossing the Dorsetshire and Cheviot

breeds.—The wool sells for 10d. per lb.

The HEREFORDSHIRE BREED

have no horns, white legs and faces, with wool growing close to their eyes, carcase tolerably well formed, weighing from 10lb. to 18lb. a quarter, have very fine short wool, from 1½lb. to 2½lb. a fleece*, sold in 1792 for 2s. 9d. a lb.;—the mutton excellent.

The following particulars respecting this breed of sheep were communicated to the late worthy baronet, Sir Charles Turner, in answer to some queries proposed by him:—

"The lambs, when weaned from the ewes about Midsummer, are put upon old

* The sheep that have the finest wool are kept *lean* and produce 1½lb. each; if better kept, they grow larger, and produce more wool, but inferior in quality.

clover

clover and rye-grass, or dry pasture-land, and wintered the same, except in snow or very severe weather, when they have a little hay or pease-haum.

"The wethers are generally put from the store-sheep at Michaelmas, when they are past three years old, kept well in the winter and slaughtered fat the next Summer at four years old. Some turn them to feed sooner, but that is when the stock is too large for the keep. The sheep certainly feed better at four years old than sooner, and the flesh better; indeed they are put to feed at any time of the year that suits the owner, but should be near fat before winter (or turned off to feed as above); then they are put to turnips or good dry pasture, and changed often; sometimes kept in the house, and fed with hay and oats, with some water always in a trough by them; which last is expensive, but the mutton excellent, the weight of the flesh from 50 to 80 pounds. A Ryeland sheep that will weigh 50lb. when

good fair mutton, is often fed till he weighs 80lb.

"The store-sheep (except yearlings and two-years-old, upon the corn-farms, and where the wool is finest) are put in the sheep-cot by night, and all the year round, and their cratches filled with pease-haum, wheat-straw, barley-straw, or any other dry food, which they eat and make dung of; the dung enables the farmers to raise good crops of barley, &c. and the sheep pasture by day on old clover and rye-grass, dry pasture, fallow, stubble, &c. but are always kept very lean, and graze quite short: when there is not convenience of putting them in the sheep-cot by night all the year, they do it from the beginning of Winter till April or May, when the lambs are able to lie out by night. The ewes must be kept in by night at the yeaning time, and when the lambs are very young, or the cold nights will kill the lambs, their wool is so very short; but if they

they are healthy at a week or fortnight old, they will bear to be out at night.

"The sheep are pastured upon commons, open fields, or inclosures, provided the land is dry and healthy for sheep, and when there is no conveniency of putting them in a sheep-cot by night at yeaning time. The sheep must not be quite the finest sort of wool but mixed with a stronger wool; it will then be more in quantity, though about 2d. a pound less in value.—If the ewes can be out of doors, the lambs bear the cold better; but if they cannot be put in the house at that time, should be seen often, and put where they are best sheltered from the cold."

Mr. Pye, a Herefordshire farmer, also told me, that the store or keeping-sheep are put into cots at night, Winter and Summer, and in Winter foddered in racks with pease-haum (straw), barley-straw, &c. and, in very bad weather, with hay.

These cots are low buildings, quite covered over, and made to contain from one to five hundred sheep, according to the size of the farm, sheep-walk, or flock kept. The true Herefordshire breed are properly called Ryeland sheep, from the land formerly being thought capable of producing no better grain than rye, being a tract of very poor land, but now found capable of producing almost any kind of grain.

The SOUTH-DOWN BREED

have no horns, grey faces and legs, fine bones, long small necks, low before, high on the shoulder, and light in the fore-quarter; the sides good, loin tolerably broad, but the back-bone too high; the thigh full, and twist good; very close, fine, short wool, from 2½lb. to 3lb. a fleece, sold in 1792 for 2s. per lb.; the length of the staple from 2 to 3 inches. Average weight of two years-old wethers, 18lb. per

per quarter;—the mutton fine in the grain, and of an excellent flavour.

These sheep stand higher behind than before, and the hind-quarters are generally heavier than the fore-quarters, which, in Sussex (the district they are bred in), is esteemed a merit, as the butchers sell the former at full one penny per lb. more than the latter, a singularity that we believe is peculiar to this district; for, in all the other markets we have seen, the hind-quarters, and particularly the legs, are sold for a halfpenny a pound less than the fore-quarters. This breed of sheep being hardy and ready feeders, we hope the defect will be remedied in a few years, and other improvements made by the attention and exertions of enterprising breeders, particularly the ingenious Mr. Elman, of Glynd, whose flock is already superior to most of his neighbours, both in carcase, quantity, and quality of wool.

The lambs are mostly dropped from the middle of March to the end of April, and

and are well covered with wool when dropped; one-third of which will be twins, if the ewes have been well kept.

The districts where these sheep are bred are very dry, chalky downs, producing short fine herbage. The wethers are seldom kept to more than two years old; many feed them at 18 months.—The ewes are mostly sold at four and a half years old to graziers, in the Wealds of Sussex and Kent, who fat both lamb and ewe the next Summer, but of late years they have had a better market in other counties, particularly Suffolk and Norfolk, where they are found (by those who have tried them) to answer much better than their own breed of Norfolk sheep, being quicker feeders, and equally hardy for bearing the fatigues of folding.

The NORFOLK BREED

have black faces, large spiral horns*, very small, long, thin, weak carcases, with narrow chines, weighing from 16lb. to 20lb. per quarter, very long black or grey legs and large bones; the wool short and fine, from 1¼lb. to 2lb. per fleece, sold in 1792 for 1s. 5d. per lb.

The mutton is fine-grained and high flavoured, but will not keep so long in hot weather as some other kinds: they have a voracious appetite, a restless and unquiet disposition, which makes them difficult to be kept in any other than the largest sheep-walks, commons, or fields.

This breed of sheep is the most prevalent in Norfolk and Suffolk, and seems to have been pursued solely for the purpose

* The horns of some of the Norfolk and Suffolk rams measure 36 inches long, following the turn of the horn; and 9½ inches round at the root, or setting-on at the head.

of

of folding; as it does not appear they have any other good property to recommend them, besides being good travellers, for which they seem well adapted, from their very long legs and light lean carcases, which, with their very large horns and long low necks, give them an appearance altogether uncouth, and so totally different from the polled sheep with long wool, that a person who had been accustomed to see no other, would on the first sight of a flock of Norfolk sheep, take them for a species of deer rather than sheep.

There are, probably, few districts where there is so much room for improvement of sheep-stock as in Norfolk; and I am glad to find, that the Dishley and South-Down breeds have been introduced, and succeed so well, as to be in a fair way of supplanting the Norfolks.

Mr. Coke, of Holkham, has disposed of his flock of Norfolks, from an entire conviction, on long experience, that they are a most

a most unprofitable breed*; he finds, that if folding be necessary or profitable (which, by-the-by, is doubtful), the Dishley breed will bear this operation very well, having had a large part of 60 acres of wheat folded with them in 1792.

In comparison with South-Down sheep, an equal number of each sort were kept together from lambs, and when sold in Smithfield market at two years old, the South-Down gave seven shillings a head more than the Norfolks. The fleece of the South-Downs is nearly 1lb. heavier; and Mr. Bevan's shepherd says they are hardier, and will eat what the Norfolks refuse, are ready to go to fold sooner, are more quiet and obedient than Norfolks, and that he could fold them almost to an inch without hurdles; that last year he would not let his own ewes take the South-Down rams, but this year was ready

* Annals of Agriculture, vol. 19.

enough

enough to do it*: the prejudices of an old shepherd giving way in this manner, is a decisive argument against his own breed of Norfolks.

The ewe flock of this breed of sheep are wintered at a great expence, the common allowance being an acre of turnips to six sheep, besides hay, rye, and depasturing on the sheep-walk, which is often well stocked with ling or furze: by valuing the turnips only at 3l. an acre, and the allowance of hay, &c. at 2s. per head, the expence of wintering will be 12s. per sheep.

Mr. Young, in his Agricultural Report of Suffolk, states, that the annual return in lamb, wool, and folding, is, for the best flocks, 13s. per head†; but the average

* Annals of Agriculture, vol. 19.

	s.	d.
† Lamb	10	0
Wool	1	4
Folding	1	6
Annual return . .	12	10

The price of crones or draught ewes is from 10s. to 11s.

of

of the county is not more than 10s.; from which it appears they are kept all the Summer for nothing or something worse.

This expence of wintering, we believe, is unknown amongst the owners of every other breed of sheep in the kingdom.

The HEATH BREED

have large spiral horns, black faces, and black legs, a fierce wild-looking eye, and short firm carcases (weighing from 12lb. to 16lb. a quarter), covered with long, open, coarse, shagged wool; the fleeces weigh from 3lb. to 4lb. each, and sold in 1792 for 6d. per lb.

They are an exceedingly active and hardy race, run with amazing agility, and seem the best adapted of all others to high, exposed, *heathy*, mountainous districts. They are seldom fed until they are three, four, or five years old; at which age they feed

feed well; the mutton is excellent, and gravy high flavoured.

This hardy wild-looking tribe are first met with in the North-west of Yorkshire, and are in possession of all that hilly or rather mountainous tract of country adjoining the Irish Sea, from Lancashire to Fort-William. Indeed their introduction into the Western Highlands of Scotland, has been only of late years; nor is there the least doubt of their answering equally as well in the mountains of Argyleshire, as in those of Westmoreland and Cumberland; for it is well known, that the climate is pretty much the same in all that rugged coast, having almost uninterrupted rains and strong winds.—Indeed the Galloway and Ayreshire sheep are in some degree different; but I take them to be only a variation, probably from crosses between these and the Cheviot sheep. But, within these few years, they have in those two counties been making some trials

trials of that most useful kind of sheep, best known by the name of the Dishley breed; and every friend to his country will be glad to hear, that they have hitherto succeeded beyond expectation. Nor will any person conversant with breeding sheep be surprised at this, because they are in every respect as well or better calculated to thrive in the flat country and lower hills, as the black-faced ones are for the mountains.

As these sheep are so well adapted for lingy* or heathy mountains, and cold exposed situations; what a pity they are not covered with a finer and more valuable fleece! There is no doubt but it might be improved; indeed it is scarce possible to make it coarser. Some trials from the Dishley breed have been made about Moffat, in Annandale, at the request of

* By *Ling* is meant *Erica vulgaris*, *Heath* or *Heather*, a plant used for thatching houses; and not *Scirpus cæspitosus*, which the Cheviot shepherds call *Ling*.

that patriotic nobleman the Earl of Hopetoun; but I am very sorry to hear, that, notwithstanding the influence and earnest solicitations of his Lordship, the breeders are so exceedingly averse to it, that they do and say every thing they can, to lessen the merit of these trials, and, like all ignorant people, are quite prejudiced against every kind of sheep except their own.

The Heath sheep have been tried in those remote parts to the North of the Murray-Firth, viz. Rossshire, Sutherland, and Caithness, and have answered very well. The Cheviot sheep have also found their way into those districts:—which of the two breeds will be found the most advantageous and best adapted for these Northern regions, time and fair experiment will discover. There is little doubt but that either of them will be found better than the dun-faced kind, hereafter described, and the only sheep known in the Highlands until of late years.

The

The HERDWICK BREED

have no horns, their faces and legs speckled; but a greater portion of white, with a few black spots, are accounted marks of the purest breed: they have fine, small, clean legs; wool, short; the fleeces from 2lb. to 2½lb. each, sold in 1792 for 6d. per lb.

The ewes weigh from . . . . . 6lb. to 8lb. per quarter.
The wethers at 4½ years old from 9lb. to 11lb. per quarter.

This breed of sheep is peculiar to that high, exposed, rocky, mountainous district at the head of the Duddon and Esk rivers, in the county of Cumberland, more particularly known by the names of Hardknot, Scalefell, and Wreynose.—They have a thick matted fleece of short wool, which, though coarser than that of any of the other short-woolled breeds, is yet much finer than the wool of the black-

faced heath sheep, with which variety they seem to have been crossed, as we suspect, from some of the rams having small horns, and from some kempy hairs being intermixed amongst the wool.

They are a lively little animal, well adapted to seek their food amongst these rocky mountains, in many places stony and bare; and where covered, the soil is thin, but the herbage mostly green, intermixed with heath, especially on their summits.

They have no hay given to them in Winter, but support themselves in the severest storms, and deepest snows, by scratching down to the heath or other herbage; indeed it seldom happens but that some parts of the mountains are blown bare, which the sheep find out.—They do not face the coming storm, as reported, but, like other sheep, turn their backs on it, and in such weather they generally gather together, and keep stirring about; by

by which means they tread down the snow, keep above it, and are rarely overblown. The loss per cent, per ann. is of hogs from 5 to 10—of old sheep from 2 to 5.

The spring in this situation is late, on which account they do not chuse to have their ewes to lamb before the beginning of May; the lambs when dropped are well covered with wool.

The ewes are kept as long as ever they will breed lambs, and are often from *ten* to *fifteen* years of age before they are sold. —The wethers go off at four and a half years old; and both are sold to the butchers and killed from off these mountains, without being put upon any better pasture.

The mountains upon which these sheep are bred belong to Lord Muncaster, as do also the stock that depasture them; which have, time immemorial, been farmed out to *herds* at a yearly sum. From this circumstance, these farms (three or four in

number) have obtained the name of *Herdwicks*; that is, the district of the *Herds*; and the sheep the appellation of *Herdwick sheep*. They have gained such a character for hardiness of constitution, that Mr. Tyson, who farms the principal flock, sells a number of tups every year *(to improve the hardiness of other flocks)*, into various parts of the adjoining counties.—The price is often as high as *two guineas and a half*.

The CHEVIOT BREED

are hornless, the faces and legs in general white; the *best kinds* have a fine open countenance, with lively prominent eyes; body long, fore-quarter wanting depth in the breast, and breadth both there and on the chine; fine clean small-boned legs; thin pelts; weight of carcase when fat, from 12lb. to 18lb. per quarter; fleeces from 2½lb. to 3½lb. each; and sold in 1792 for 11d. per lb.

The

The wool is not all fine, there being in a fleece of 3lb. weight, only 2lb. of fine wool, worth 1s. per lb. (when the whole fleece sells at 10d. per lb.) and 1lb. of coarse wool worth only 6d. per lb.

Some of the Cheviot sheep are speckled on the face and legs, but those are, probably, a mixed breed, from crossing at different times with the heath sheep, to whom they have been long neighbours; for, as you leave the heights of Annandale to the Eastward, you insensibly lose the Heath sheep and mixed breed, after which all those extensive fine green hills on the Scotch and English Borders (extending from Reedwater, on all sides the mountains of Cheviot, to the barren heaths of Lammer-moor), are covered with the Cheviot breed.

The *best kind* of these sheep are certainly a valuable mountain sheep, where the *pasture is mostly green sward*, or contains a large portion of that kind of herbage;

which is the case with all the hills around Cheviot, where those sheep are bred, and the fine herbage which the Border hills every-where produce, supports them so well in Summer as to enable them to stand the severities of Winter the better.

The shape of this breed of sheep has been much improved of late years; but all those who have been aiding in making these improvements, readily acknowledge, there is still much to do, especially to the fore-quarter, which they all agree is very defective; but we hope it will not long remain so, as we think we see a spirit of investigation arising amongst these breeders, that in a few years will remedy, not only this defect, but will discover others, which at present they are not willing to admit.

But as knowledge is progressive, we cannot expect the perfection of this breed of sheep can be obtained at once: it must proceed by slow gradations, as every other improvement hath done; it is

is a great point gained, that we admit defects, and are desirous to amend them.

That breed of sheep which brings the most profit to the farmer, will always be pursued by him, whatever his situation; but that object is not to be obtained in this district from *fine wool alone*.—Perfect mountain sheep should be *hardy*, *well formed*, and *quick feeders*. These qualities will always recommend them to the grazier, who will never purchase a slow-feeding animal, while he can get one of a different sort, though at a considerably advanced price. But if to these qualities, so essential to the sale of a mountain farmer's stock, can be added a *fleece of fine wool*, a breed of sheep would then be obtained, the properest for a hilly district, of any we have yet seen*. There is little doubt but this may be ac-

* It is not the value per *lb.* which constitutes the farmer's profit, but the value per *fleece*; or rather, that breed is *the best* that brings the *most profit*, *in fleece and carcase jointly*, from the same ground in equal times.

complished

complished by *proper selection*; and, probably, the *best kind* of Cheviot sheep, from their hardiness, and producing a portion of fine wool, are the properest stock for laying the foundation of so desirable an improvement.

The mode of management amongst the sheep farmers of these hills is, to divide their flocks into different parcels, viz.—*Lambs*, *hogs*, *gimmers*, *ewes*, and *wethers*; and to keep each parcel upon such pasturage as is thought to be most proper for them: every parcel is attended by a shepherd, who is bound to return the number of sheep delivered to him, either alive, or in his account of dead sheep, which are in general sold at different prices according to their goodness. They have no other food but what their pastures produce, except in deep snows a little hay is given them.—

The ewes are not suffered to breed until they are 3 years old, and at 4½ are sold for about 13*s.* per head to graziers, who feed

feed both them and their lambs next Summer, the profit from 12s. to 15s. for keeping one year on grass. The wethers are sold at 3½ years old, for 14s. or 15s. each; and after keeping near 12 months on grass, leave a profit from 10s. to 12s. each.

It has been an old and general practice to milk the ewes of this breed of sheep, for eight or ten weeks, after the lambs are weaned; from this milk, great quantities of cheese are made, and sold for about 3d. per lb.; when kept to three or four years old, it is exceedingly pungent, and on that account some people prefer it to cheese of a much better quality.

To milk ewes for two or three days after the lambs are weaned, is an useful practice; but when continued for eight or ten weeks, it becomes very detrimental, keeps the ewes lean, and ill prepared for meeting the severities of winter. The profits of milking ewes for eight or ten weeks

weeks are estimated at 8d. per ewe, and they are decreased in value at least 1s. 6d. per head, as is generally agreed by the most considerable and intelligent hill farmers, amongst whom the practice is going very fast into disuse, and in a few years will probably be totally laid aside.

All the low parts of Northumberland have a mixed breed of sheep between the Cheviot, Tees-water, and Lincolnshire; —in general a very tender, ill-formed, unprofitable breed, though much better than the kind they formerly had, which were called Mugs, from the wool growing into their very eyes. Some remnants of this breed that I have seen, have their wool so grown about their eyes, that the poor animals could scarce see to eat or pick out the grass. This mug or muff by every breeder and grazier of experience in these days, is looked upon as a certain indication of a soft, tender, slow-thriving sort. However, since the Dishley breed has

has made its way into Northumberland, their sheep are very much improved; and they can now, not only make them fat at an earlier date, but help to supply Newcastle, Shields, and Sunderland, and all their populous environs, with as fat mutton as either the county of Durham or Yorkshire; and a vast number of fat sheep from the North * (as well as lambs in the season) are weekly sold in Morpeth, which, perhaps, ranks the third market in England for quantity of stock sold, weekly or annually.—Smithfield first, Wakefield second,† Morpeth third.

* From the North parts of this improving county, and both sides the Tweed, the natives of Scotland not having yet learned to eat fat mutton like the pitmen and keelmen about Newcastle, induces the Borderers to send their fattest mutton to Morpeth market, rather than to Edinburgh, where the consumption of mutton is very small, compared with what it is at Newcastle, though pretty much increased of late years.

† It is thought by many that Rotheram fat-market now begins to rival Wakefield; it is held every Monday, and has increased very much of late.—Wakefield is on the Wednesday, and held only once a fortnight.

The wool of this county, for want of home-manufacturers, either goes to Scotland, even as far as Aberdeen and Peterhead, or into Yorkshire, to Leeds, Bradford, &c. to the latter mostly by land-carriage: but what is most extraordinary, a part of this wool, after being combed at Darlington, Leeds, &c. returns into Scotland to be spun; then is conveyed back to be made into stuffs, a part of which once more returns to Scotland for the people to wear. However, the industrious North-Britons are now establishing woollen manufactures in every corner, which, I am well informed, are patriotically supported by the first nobility in Scotland; and it were to be wished that the nobility and gentry in Northumberland would imitate so laudable an example. Such establishments would in all probability very soon prevent these very expensive and tardy conveyances.

On both sides the Tweed the sheep are much the same: but continue to grow worse

worse Northward, until we reach the extent of barren country called Lammermoor, where they seem a mixture between the Cheviot and Heath kinds, but mostly inclined to the latter. From hence, all along that fine coast called the Lothians, you meet with no sheep except a few to breed fat lambs for Edinburgh market:—for, our Northern neighbours seem to have full employment for all their level fields to produce corn for home-consumption. Even Fifeshire, Angus, and the Mearns, afford few of those innocent creatures: and when we ascend the Grampian Hills, we do not find them so plentifully stocked with sheep, as the Southern hills of Scotland. Every one who has visited these mountains, must have perceived this to be owing to the pasturage being worse in quality and less in quantity than the Southern hills.—It is, here, however, that we first meet with

The

The DUN-FACED BREED.

They have no horns; the faces, in general, of a dun or tawny colour, and wool variously mixed and streaked, black, brown, red, and dun, some of which is very fine; their tails short, and size remarkably small, many of them weighing no more than 6lb. or 7lb. a quarter; the mutton excellent.

Probably this breed is descended from, or crossed by, sheep that might be introduced when the Spanish Armada suffered upon these coasts; a breed of this kind being found in Spain, as appears by the information I lately received from Matthew Stephenson, Esq. of Breaks-Hall, in Westmoreland (a gentleman whose attentive observations, when abroad, do him the greatest honour), which seems to put this matter almost out of dispute:—he says, "When "in Spain, I saw in Andalusia, exactly the "same

" same kind of sheep you describe, under " the title of the Dun-faced sheep, and " which the Spaniards call *Ovejas Mari-* " *nas*, of whose wool, I was told, the fine " Segovian cloths are made; this wool is " reckoned the finest in the world, ex- " cepting perhaps the Vigonian wool of " Peru, and the Cassimerian wool, of " which the finest turbans are made."

I am inclined to think them too tender and delicate a breed for these mountains, and shall not wonder if they are, in a few years, driven out by that hardy race of mountaineers before described, under the title of Heath Sheep, or more probably by the Cheviot Sheep, from the exertions now making by the British Wool Society, to introduce them into those districts on account of the superior quality of the wool.

The SHETLAND BREED

are generally hornless, and are peculiarly distinguished by the unusual shortness and smallness of their tails; they weigh from 7lb. to 10lb. a quarter; wool from 1lb. to 3lb. a fleece, very fine, and of various colours.

It appears from an account addressed to the British Wool Society, by Mr. Thomas Johnson, that there are two varieties of Shetland sheep;—from his Report the following extracts are collected:

One of these varieties carry coarse wool above, and soft fine wool below, and have three different successions of wool yearly; two of which resemble long hairs more than wool, and are termed, by the common people, *fors* and *scudda*.—When the wool begins to loosen at the roots, which generally

generally happens about the month of February, the hairs or *scudda* spring up; and when the wool is carefully pulled off, the tough hairs continue fast, until the new wool grows up about a quarter of an inch in length, then they gradually wear off; and when the new fleece has acquired about two months growth, the rough hairs, termed *fors*, spring up, and keep root, until the proper season for pulling it arrives, when it is plucked off along with the wool, and is separated from it at dressing the fleece by an *operation* called *forsing*.—The *scudda* remains upon the skin of the animal, as if it were a thick coat, a fence against the inclemency of the seasons, which provident Nature has furnished for supplying the want of the fleece.

The native or *kindly breed**, which bear the soft *cottony fleeces* (as they are called), are rather of a delicate nature; their wool is short and open, and destitute of a

* I take this breed to be only a variety of the Dun-faced Sheep, before described.

covering of long hairs.—These soft-woolled fleeces are very often lost or rubbed off during the Winter or early in the Spring, which, it is supposed, might be prevented by clipping or shearing the sheep, in place of pulling off the wool;—a barbarous practice, tending to weaken the sheep, and hurt the length of the staple.

The Shetland sheep are of various colours; the silver-grey wool is thought to be the finest and softest, but the black, the white, the mourat or brown, is very little inferior; it is all of the softest texture, fit for the finest manufactures, and in some instances, has been found to rival Spanish wool itself; but the pure white is generally the most valuable for all the finer purposes in which combing-wool can be used: for softness and for lustre no wool equals it; and the skin, with the fleece on, can be converted into a fur of very great value; some specimens of which have been already sent to the China market.

They

They are in general very hardy, and of a much wilder temper than any other I have been acquainted with. In the Winter season, and especially while the ground is covered with snow, they eat the sea-weed very greedily; and often, during long and severe snows, they have little else to live on. Nature seems to have imparted to them a perfect knowledge of the times at which this food may be procured; for, immediately upon the tide beginning to fall, the sheep, in one body, run directly down to the sea-shores, although feeding on hills several miles distant from the sea, where they remain until the tide returns, and obliges them to seek their usual haunts.

HAVING now gone through the different breeds of British Sheep, I shall beg leave to add a few words on

The IRISH SHEEP;

a pretty large sample of which I saw at the great fair of Ballinasloe, where the collector of the tolls told me that there were 95,000 shewn at that time, and that there had often been more. But I am sorry to say, I never saw such ill-formed ugly sheep as these; the worst breeds we have in Great Britain are by much superior. One would almost imagine that the sheep-breeders in Ireland have taken as much pains to breed plain aukward sheep, as many of the people in England have to breed handsome ones. I know nothing to recommend them except their size, which might please some old-fashioned breeders, who can get no kind of stock large enough. But I will endeavour to describe them, and leave my readers

readers to judge for themselves.—These sheep are supported by very long, thick, crooked grey legs; their heads long and ugly, with large flagging ears, grey faces, and eyes sunk; necks long, and set on below the shoulders; breasts narrow and short, hollow before and behind the shoulders; flat-sided, with high narrow herring-backs; hind-quarters drooping, and tail set low. In short, they are almost in every respect contrary to what I apprehend a well-formed sheep should be; and it is to be lamented, that more attention has not been paid to the breeding of useful stock, in an island so fruitful in pasturage as Ireland. Indeed the same Mr. Frenches mentioned before, and some other spirited breeders, have, at very great expence and hazard, imported both bulls, tups, and stone-horses from England; and very great improvements have already been made from these crosses. I saw some of the descendents of these sheep from the English rams at the above fair; and it is

both extraordinary and pleasing to see how much they exceeded the native breed. But a very great bar is put in the way of these islanders, to the improvement of their sheep: the same law is in full force against exporting sheep into Ireland, as into France, or to any of our natural enemies on the Continent. I think it is a real hardship, that this division of his Majesty's subjects cannot have the benefit of improving their breed of sheep, without smuggling them over. Application was made to Lord Harcourt, when Lord Lieutenant of Ireland, for leave to send rams over to Ireland from England, offering very high security, three or four times the value of the ram, for his being returned into England, or, in case of death, a proper certificate to be produced along with his skin, ear-marks, &c. but without effect. However, to show that the fault is not in the Irish breeders, but, on the contrary, to prove that they are exceedingly desirous to improve their breeds of stock by the

the help of those from this island, even at an expence that many of our breeders in Great Britain would grumble at, I will lay before my readers an authentic account of a stone-colt and some sheep, sold at Ballinasloe fair, in the county of Galway, in Ireland, which was given by Mr. French, a gentleman of fortune and character, who lives in the neighbourhood of Ballinasloe, to a particular friend of mine, who was so kind as to present it to me.—They were sold by auction, in small lots, the 5th of October, 1770.

	£.	s.	d.
66 ewes, sold to different people, amounted to	1094	5	5
9 rams,	352	12	6
5 ram-lambs,	29	0	1½
1 stone-colt, 3 years old,	170	12	6½
Total £.	1646	10	7

One of these rams was sold to Col. Pearse at 52 guineas.

2 ewes to John Bodkin at	46
2 ditto to Bar. Rochfort at	43
2 ditto to Col. Pearse at	40
2 ditto to Mr. Blake at	40

Since

Since Mr. French gave the above account to the gentleman from whom I had it, I have had the pleasure of seeing him in Ireland; I also met with Mr. Johnson, brother to the person who sold the above goods, who gave me the same relation of this affair as Mr. French did.

SWINE.

SWINE are the *fourth* kind of domestic animals which we design to treat of. These creatures, though in many respects disagreeable, are of considerable importance to the community at large, and to farmers in particular; and, in no instance, perhaps, has Nature shewn her economy more than in this race of animals, whose stomachs seem a receptacle for every thing which other creatures refuse, and which, but for these, would be often entirely wasted. They industriously gather up, and greedily devour, what would otherwise be trodden under foot

foot and wasted.—The refuse of the fields, the gardens, the barns, and the scullery, to them is a feast.

The most numerous breed of hogs in this island, is that kind generally known by the name of

The BERKSHIRE PIGS,

now spread through almost every part of England, and some places of Scotland.—They are, in general, of a reddish colour, with black spots upon them, large ears hanging over their eyes, short-legged, small-boned, and inclined to make fat.—The surprising weight that some of these hogs have been fed to, would be altogether incredible, if we had it not so well attested. Mr. Young, in one of his Tours, gives an account of one in Berkshire, which was fed to eighty-one stone some odd pounds, which I had often before heard of when in the South of England. But I was some time ago favoured by a correspondent with

with an account of an extraordinary pig which was killed in Cheshire;—I will beg leave to transcribe it in his own words: "On Monday, the 24th of January, 1774, a pig (fed by Mr. Joseph Lawton, of Cheshire) was killed, which measured, from the nose to the end of the tail, three yards eight inches, and in height four feet five inches and a half: when alive, it weighed 12 cwt. 2 qrs. 10lb; when killed and dressed, it weighed 10 cwt. 3 qrs. 11 lb. or 86 stones 11 lb. avoirdupoise.—This pig was killed by James Washington, butcher in Congleton, in Cheshire."

There was a breed of large white pigs, with very large ears hanging over their eyes, which a few years ago were very common in many parts of Yorkshire and Lancashire. They were very plain, thin, awkward hogs, with very long legs; but what distinguished them most, was two wattles or dugs, not unlike the teats of a cow's udder, which hung down from their throats,

throats, one on each side. But this unprofitable kind has now, almost every where, given place to the more valuable breed which we have just been speaking of.

The Chinese or Black Breed,

will always be valuable; for though they do not feed to any great weight, yet they fatten amazingly fast, and afford the sweetest bacon; which has gained the preference every-where amongst the nice-eating people. Indeed to those that have not been accustomed to the very fat bacon in the southern and midland counties, the very sight of it is enough to a person with a very delicate stomach, who cannot behold the very fat part of it without almost sickening, while the people in those counties eat it at all times of the day; I have frequently seen them breakfast upon it.

The

The black breed are deservedly in great esteem, and it would be much more so if they were not such a mischievous race; for, the most attentive herding (or tenting as they call it in some parts of the South) can scarcely keep them from your fields of corn, pease, or potatoes; nothing will secure them, except walls or good paling.

I know of only one other breed of pigs in these islands that I have observed, and these are

The Highland or Irish Breed,

a kind no otherwise worth naming but for distinction's sake; for, I am persuaded, whoever is acquainted with the Berkshire or Black breeds, will never throw those aside for these. They are a small thin-formed animal, with bristles standing up from nose to tail, and exceedingly bad thrivers. We met with considerable herds of them upon the moors in different parts of

of the Highlands of Scotland, picking up the wild berries, especially about Thurso, in Caithness.

I have seen the same kind of pigs in different parts of Ireland.

GENERAL

GENERAL REMARKS.

HAVING now, to the best of my knowledge, and according to what I proposed, given an account of those domestic animals, in the breeding of which our farmers in particular are so deeply interested, as well as the kingdom at large, I will beg leave, before I proceed farther, to add a few

GENERAL REMARKS.

In the *first* place, then, it would seem that the largest domestic animals are not

the best, or most advantageous to the breeder or feeder; because we generally find, that the large big-boned cattle and sheep require more and better food in proportion, to support and feed them, than those of a middling size and small bones; and the larger, bigger boned, and clumsier they are formed, the more unprofitable they are; while, on the contrary, the truer they are formed, and the finer the bone, the more profitable, as they not only take less food in proportion, but feed readier.

For I aver, that no large-boned animal will feed so quick, or cover so readily and thick with fat flesh, as one with a *small bone*, if well formed. This is the criterion—this is the main principle that we found our judgment upon, respecting all animals, which are to be fatted for the support of mankind; and we can justly say, that this judgment is confirmed by near forty years' experience. Notwithstanding this assertion is made with some

some degree of positiveness, yet we are not unconscious of its being a *new doctrine*, to the generality of breeders in this island; and, consequently, will appear surprising and strange to many old breeders and graziers. But I have not a remaining doubt, if the advocates for large bones will make fair, candid trials, the small bones will win, or gain the prize, nine times out of ten, or rather every time; nay, I am inclined to think, that the small-boned, true-proportioned animal, will pay 4d. while the big-boned one will only pay 3d. for what it eats.—When I assert this, I would wish to be understood, that I mean from the time of calving or lambing, to the time of killing for the market; because, I look upon the grazier, who buys in and feeds, and he that breeds and feeds, as two very different people. It is the latter of those that the public are obliged to for that useful observation, of small-boned animals excelling large-boned ones in feeding; because he sees, watches, and ex-

amines the various pushes and improvements from the beginning to the end; while the grazier, who buys in his stock, is easy, in a great measure, how they are bred, so long as they pay him for feeding. A plain, coarse, ugly animal, may pay him more than a fine well-made one; because he buys the coarse one at a much less price in proportion, and it is of little consequence to him as an individual: but, to his country, to the community at large, it is a matter of prodigious importance, much more than has in general been thought of; because the more meat, and less bone, you can produce from a given quantity of pasturage, turnips, cabbages, &c. the better surely, and more mouths you must feed.

The beef or mutton is finer grained, and sells higher by the pound; it is worth more to the consumer than the other, because it affords more and better flesh, and less bone; and, supposing the poor are under a necessity of buying the coarse

parts,

parts, in a dear time, it is worth more to them, in proportion, than the coarse of the large-boned ones; because, though still coarse, it is finer than the others, and has less bone; in fact, it is the cheapest and best eating to the rich, to the manufacturer, and to the poor.

Even in regard to horses intended for the draught or saddle, those I presume are the best, in general, that are of the truest proportion, in respect to bone, carcase, or form, and of a *middling* size. It may be admitted, that the great awkward lumbering horses, from 16 hands to 18, may be the properest for drays or stage-waggons, &c. But we know that horses of this size are unfit for the saddle, the cart, or the plough; and where one is wanted for the former purposes, I suppose five are wanted for the latter: perhaps from 14 to 16 hands are the most serviceable; or, to come nearer, I fancy we shall find the best from 14 hands 2 inches to 15 hands 2

inches ;* but perhaps it is not very easy to ascertain this, to any great degree of exactness, nor may it be absolutely necessary.

However, this I think we may venture to assert, that in those kinds of animals now under consideration, and perhaps in most others, there is a certain symmetry, or proportion of parts, which is best adapted to a particular size in each kind. All those of each kind, that are above this size, we find disproportioned according to the size they attain to; and in the degree that they are advanced beyond this line of perfection, we find them less active, less

* I am glad to find that the *middle-sized* horses are now become fashionable; or rather, that reason and common-sense have at last prevailed over whim and caprice; because I have observed, that at all the horse fairs where I have lately been, the dealers now prefer those horses which are from fifteen hands to fifteen and a half, even for the carriage; and it is amazing to me that this matter should have been so long of making its way; however, now it has taken place, and I am persuaded that it will not easily lose its hold again for the reasons given in the text.

strong

strong in proportion, and always less able to endure hardship or fatigue. We find all great horses tire sooner than middling-sized ones; they are slower in motion, they are more subject to disorders, and, consequently, wear sooner out.

In neat cattle or sheep, we, in general, find, that the largest are the tenderest, and most liable to complaints; that they require more and nicer fare, are slower in feeding, and worse butchers' meat when fed; and that they stand Winters, or inclement seasons, much worse than the well-proportioned ones: therefore it is these *well-proportioned handsome animals* that we would recommend to the attention of the breeders, to choose both *males* and *females* from, if possible, or as near to them as may be. It perhaps has been owing to the idea of largeness, or the wish to breed the biggest, in the different kinds of domestic animals, that has so long prevented our breeders from selecting and distinguishing the most valuable kinds:

for, so universal was this idea, and so much were we blinded by it, that we did not perceive which were the most valuable animals of each kind. We had no conception of any animal being valuable or *good*, that was not *great*. We could not separate those two ideas of good and great. We did not attend to that symmetry and proportion, which so essentially characterize the valuable kinds of each species, and which seldom, or never, fail of being the hardiest, and the best thrivers. In short, it was left to this age to make those nicer distinctions, which constitute the able breeder and discerning judge; and the more these distinctions are attended to and examined, the more they will be pursued; in consequence of which improved notions, our breeders must now necessarily follow those kinds that are most valuable.

Much has been said of late years about short-legged stock being the best, particularly neat cattle and sheep;— nothing would

would go down once but short legs. That little, short-legged, dwarfish breed of sheep, so much (though undeservedly) run upon a few years ago, are very properly called, by a considerable breeder, an acquaintance of mine, "the Gentleman's sheep;" for though, to those who are not judges, they have a pretty enough appearance, yet they will not bear examining by an attentive and able judge —I mean him who judges by his fingers as well as his eyes; a method that is out of the Gentleman's line. These originated in Lincolnshire, but are now almost entirely disused, for very good reasons.

I wish to be cautious in contradicting a general notion, or received opinion; but we sometimes find the most prevailing opinions wrong: for instance, what we have just been observing of the largest and biggest-boned animals not being the best, though formerly thought so, and respecting short legs; though I admit the propriety in a degree, I would wish to caution

tion our breeders against the extreme. I would have them recollect the old proverb, that all extremes are wrong; and I would beg leave to observe, that the attentive breeders of this day have, I apprehend, made some notable and sensible distinctions, in regard to those animals that must be fed, and slaughtered for the use of mankind, viz. between what they call essentials and non-essentials. They give the former title to the back and sides in particular, as well as the whole proportion of the carcase, always taking in the inclination to make fat.—The non-essentials are the legs, ears, horns, tail, &c. and even wool and hides; for though these are valuable in themselves, yet they are more to be dispensed with than the back, sides, &c.: for, those breeders and graziers, who keep their minds open to conviction, and reason coolly, say, that they have seen good carcases, with thick or thin hides, under long, short, coarse, and fine wool, with long, short, thick or thin horns,

horns, or ears, &c.; but that they never saw a good carcase without the back broad, and sides round, or without that proportion or symmetry in the carcase, which we have endeavoured to point out, in our descriptions of the bull and ram. Nevertheless, I must observe, that though they have given those externals the denomination of *non-essentials*, for distinction's sake they are not to be quite disregarded; for though they are not properly essential yet they are very often strong marks or indications of good or bad thrivers, &c. as, for instance, a thick hide seldom covers a quick-feeding carcase, or a heavy fleece a ready-feeding or fine-grained carcase of mutton.—Again, fine, small, and straight bones in the legs, and thin hides and pelts, are almost certain signs of a kindly breed, and fine-grained beef or mutton, &c. Thus we find the thick pelts, and heavy wool in Lincolnshire, cover the coarsest grained mutton we know of; while a variation of the same breed

in

in Leicestershire, highly improved, having considerably less wool, and very thin pelts, are quicker feeders, and their mutton as fine-grained and sweet as a mountain sheep.

Though it may seem very extraordinary to the careless and unobserving, yet it is a fact well known to the attentive breeder, that, in general, all our best and most valuable kinds of stock are found upon the *middling* and *worst* grounds, and not upon the *best* lands, as we should naturally imagine; and the reasons that it is so, are simple and obvious:—those breeders who occupy the middling and indifferent tracts of country, are under the necessity of producing an industrious and thriving breed of animals; because a large, tender, big-boned kind, could not subsist upon their keeping, or the produce raised upon such lands; while the good land makes up for every deficiency, or at least so far warps the judgment of the unthinking breeder, that he plumes himself upon having

ing stock superior to his industrious neighbours, while the merit consists in the goodness of his land, and the richness of its pasturage and produce. Satisfied with his stock being the largest, he also concludes that they are the best: while his more active and industrious neighbour, from being situated in a less fertile soil, is obliged to seek out for a hardy, thriving breed. —And this again makes me recur to the Lincolnshire breeders, who have so long stuck to such coarse unprofitable kinds of stock, both cattle and sheep, the pasturage, in a great part of that county, exceeding any other I am acquainted with in this island: for what other county have we, possessed of ground, that will, through *Summer*, sufficiently support *fourteen large sheep and one ox, upon two acres, and five sheep on two acres during Winter?* I was told by some Lincolnshire farmers, that near to Boston there are some grounds, which maintain 15 *or* 16 *sheep upon an acre* all the Summer.

On BEEF and MUTTON.

I will beg leave to make a few remarks *on Beef and Mutton exposed to sale in pieces on the shambles or stalls.*—When we consider, that the difference between what is called the coarse and fine, or the best and worst parts of beef, when cut up, is not less than one hundred per cent. of what vast consequence, then, must it be to the breeder, to propagate those cattle that have the greatest proportion of these valuable parts! And, if I am right in what I said before, it will follow, that the small-boned, true-proportioned cattle, are the very sort that produce more fine than coarse, that lay their fat upon the valuable

valuable parts, and always feed in much less time than the big-boned, coarse sort.

But it is not so with mutton; the difference in value between one joint of mutton and another is scarce worth naming. In different parts of the kingdom, they give a preference to particular joints; but the variation is seldom more than a farthing, or halfpenny per pound at most. Nevertheless, it is still right for the breeder to pursue that species which pay most for what they eat; and these, I apprehend, will always be found to be the small-boned, true formed sheep as described before: for, they not only produce the finest grained mutton, but more of it in a given time, in proportion to offal, than any other sort of sheep I know of.—But in speaking of offal here, I would be understood to include more than what the butchers generally do.—By offal, they mean hide and tallow only, in neat cattle; or skin and tallow, in sheep; and so on: but by offal in this place, I would take

in, not only hide or skin, and tallow, but bones, horns, pelts in sheep*, blood, guts, and garbage, and even wool and hair. And, however new the idea, I believe it will in general be found, that the truer and finer the form of an animal, the better quality, and greater the quantity of flesh, when fatted; and, in proportion, not only less hide or skin, and tallow, but less bone, horn, pelt, blood, guts, and garbage, and even wool and hair: and on the contrary, the clumsier and coarser the form, the flesh will in general be of a worse quality, and less in quantity, when fatted; and in exact proportion, not only more hide or skin, and tallow, but more bone, horn, &c.

Upon this principle, suppose two bullocks, or two sheep, are fatted together;

* There is sometimes not less than 20lb. weight difference, between the pelts of one sort of sheep and another, between the fine thin pelt, and the thick coarse fleshy one.

on

on the same food, the one as remarkable for coarseness as the other for fineness, and admitting the coarse one eats only as much as the other, though I have no doubt of his eating more, still a considerable part of his food must go to the support of more hide or pelt, bones, &c. while the other's food is principally converted into animal flesh; which flesh, on an average, call only worth 3d. per lb. I am afraid the horns, bone, pelt, &c. are not worth above a farthing per lb. consequently a very great loss to the community. Indeed the hide of a bullock is sometimes worth as much per lb. as his flesh; and particularly firm, strong hides, what are generally called leather-hides, are worth more, perhaps 6d. per lb.; but then these very thick hides almost generally cover a very slow-feeding carcase; and a thick pelt generally covers a coarse-grained, slow-feeding carcase of mutton. The pelt itself, though perhaps from 15lb. to 25lb. weight,

(some have been known to weigh 30lb. or more), not worth more than 2d. or 3d.; for the thinner the pelt the more valuable.

On TALLOW.

It is a well-known fact, to all experienced feeders and graziers, that those animals which lay the fat on quickest upon the outside, have the least within, in proportion; but then they are the very sort that pay the most for keeping; and, consequently, that sort that pay the most for keeping, though they have less fat on the inside, excel those that have more fat within, in exact proportion, as they pay more in a given time for what they eat. —But some will say the butcher has the most profit upon those that tallow best, or lay the fat within: I say not; because, if you will allow the butcher the same profit upon the quick feeders, or those

those that put the fat on the outside, he will always buy these, because he can sell two joints for one: and surely you can better afford to do this to the butcher.—But the fact is, the butcher can always buy these lean, lumbering, coarse animals, that lay little fat without, and much within, for so much less per stone than they afford him a profit. But surely this can be no inducement to those that breed and feed; consequently no excellence, but the contrary.

On FOLDING.

The Folding of Sheep in many parts of this island is looked upon as a matter of considerable consequence to the farmer. I confess I cannot see it in so advantageous a light; but as it is a matter I have not experienced in a very great degree, I would be cautious of condemning a practice so

universally used in many of the sheep-breeding counties in this kingdom.*—However, so far as we can go with safety, we may venture to make a few observations; and these observations I would wish to be understood as relating to single farms only, exclusive of any right of commonage, or adjacent open fields, &c.—If your farm is inclosed, or put only into shifts, or any other divisions, it matters not, we must suppose your flocks depastured upon some part of the farm; for instance, say the field A, and are folded every night upon B: now, I think, in proportion as they enrich B, they must rob or impoverish A; or, if they eat all day upon the field C, and lodge at night in D, it is the same

* On re-considering this matter, I must admit that an advantage arises to the occupier, by folding his flock on such parts of this farm as stand in need, whether in grass or ploughing, compared with the dung of that flock being scattered at random, especially in the Summer, when it is in a great measure dried away by the wind and sun, or eat by insects.

thing;

thing; and so on, wherever they eat and sleep. Only I will admit it a convenience and a present advantage, that supposing B fallow, and intended for turnips, &c. while, perhaps, you have not a sufficiency of manure to spread upon it all; in that case, folding your store-sheep upon the fallow, is perhaps getting you a crop of turnips, where they might not otherwise be had, for well I know, that it is not easy to get turnips upon many grounds without manure; and this mode we frequently have practised, though still it is 'robbing the church to thatch the choir.' But if you have a common or open field near, be doing with all my heart, and rob on; for somebody will be doing it for you, if you do it not. However, if the common, open field, &c. be at a considerable distance, you perhaps lose as much as you gain; for, marching sheep to and from their pasture several miles every day, must necessarily hurt them much; and if this is to be the case, I suppose the deer-

like thin sheep may be the best for this purpose, as being probably better able to bear the fatigue of travelling day by day. Nevertheless, the polled long-woolled sheep are employed on this service in different parts of this island.

The sheep-breeders upon the Yorkshire Wolds, fold these kind of sheep on their fallows, in many places, from Lady-day to Michaelmas. Likewise, a particular friend of mine, Mr. Benjamin Sayle, of Wentbridge, near Doncaster, folds his ewe-flock upon both grass and fallow, and travels them about three miles a day:—and few people, I believe, have shewn fatter sheep than he has; either his ewes when fatted, after having been folded while a breeding flock, or the descendants of these ewes. It is no uncommon thing for Mr. Sayle to sell his fat ewes in the latter end of May and in June, in Wakefield market, from thirty-six to forty shillings a-piece, without the wool; and I hope he will excuse me,

when I say that this same spirited breeder has given as high as 120 guineas for the tupping of 40 ewes, by a tup of the Dishley breed.

I should not have taken the liberty of saying so much of this respectable breeder, and his valuable sheep, but because I think he has more merit than any other sheep-breeder I know of, on account of breeding the most valuable sheep, considering the land they are bred upon: for every body that knows Winthill, will admit, that there are very few worse sheep-walks in England, where polled sheep are kept; and those that know it not, will, I am persuaded, find it so on enquiring.

In speaking of the importance of improving the breed of these animals we have been treating of, some of my friends, in the warmth of their hearts, have been led to say, that if those animals were improved every-where in this island to the same

perfection as we find them in a few hands only, and every corner of the *improvable* parts of this island managed in the same spirited garden-like manner that we see some small districts here and there, Great Britain would be made capable of supporting three times the number of inhabitants as at present. But without being too sanguine, suppose we could support only twice as many; if, instead of ten, we could maintain twenty millions of people, only think what an advantage it would be! and that this might be done in time there can be but little doubt.

If to the most spirited cultivation of the ground, the most approved methods of breeding the animals we have been recommending, equal attention was paid to floating, flooding, or watering of grass grounds in every part of this island, wherever the situation will admit, perhaps I shall not advance too much if I say, that there are very few parts of this island,

island, that may not, in some degree, be benefited by this most useful, though, I am afraid, hitherto little-understood improvement, especially in the Northern parts of this kingdom: many parts might have water conveyed over them, on a very extensive scale, and to very great advantage; for, every little brook or rivulet is capable of being thrown over the adjoining grounds, more or less in proportion to their descent; the more descent, the more land you can overflow.

This matter will, perhaps, appear of greater magnitude than people in general are aware of, the more it is examined; for I apprehend it may be said to lie at the foundation of most improvements in agriculture, and to be the *main spring* to all the rest; because, if manure is accounted the *primum mobile* in husbandry (and few people, I believe, will deny the truth of the observation), I apprehend it will be found that this same watering of

of the ground is, and may be made, the source of more valuable manure than any thing else I know of. But what renders it still more inestimable is, that it draws this manure from materials which, without this process, would be entirely lost; because those riches that are productive of such astonishing effects (by turning water over land), are conveyed, unobserved, down those streams to the sea; and, consequently, lost in that vast collection of waters. Now, the watering of land in a proper manner, not only raises an amazing crop of hay, but Spring-eatage, and lattermath, edishes, fog, or foggages, as they are differently called in different parts of this island. This hay again, properly consumed, makes a large annual return in dung or manure, which you can employ to great advantage on such parts of your farm as most need it; because your watered meadow requires no other help but repeating the same process as often as necessary, while it repays your expense

expense and toil in the most grateful manner, by plentiful and certain crops of hay, year after year, and, instead of being exhausted, becomes richer, or more productive.

I am well informed, that upon the watered meadows in Somersetshire, they calculate twenty shillings per acre upon the Spring-eatage; then grow a ton and a half or two tons of hay upon each acre, beside the lattermath or after-eatage. The way they reckon is this: an acre will keep eight ewes and lambs, which, at sixpence per week each couple, is four shillings; they eat it five weeks before laying it in for meadow, which makes the twenty shillings a decent return; this exclusive of all the rest.

But in many of the Southern and South-Western counties, they employ water upon their lands to as much advantage as in Somersetshire.—At Dishley, Mr. Bakewell has improved a considerable tract of poor cold

cold land, beyond any thing I ever saw, or could have conceived, by this same mode of improvement;—he has left proof-pieces in different parts of his meadows, in order to convince people of the great importance and utility of this kind of improvement: —particularly, in one part, he has been at the pains to divide a rood of ground into twenty equal divisions, viz. two perches in each piece. It is so contrived, that they can water the first, and leave the second unwatered; or miss the first, and water the second; and so on through all the 20 divisions: by which contrivance, you have the fairest and most unequivocal proofs of the good effect of improving ground by watering. And as Mr. Bakewell is so kind as to shew this experiment to any gentleman, I cannot help thinking it well worth the while of the curious, and those that have leisure, to visit this extraordinary place, where they will see many things worthy their attention and inspection, beside the watering meadows.

And those that wish to know the art of watering land without going so far to see it, will do well to read Mr. George Boswell's Treatise on the Watering of Meadows, where they will see that matter explained in a very satisfactory manner.

It is totally out of my way to meddle with political matters; but I hope I shall not advance too much when I say, that it would perhaps turn to much better account, if, instead of planting colonies, and conquering provinces, our Great Folks would turn their attention, not only to the improvement of our fisheries, but to the cultivation of every acre of improveable land in these kingdoms, as well as the improvement of the most valuable breeds of animals.—And in order to promote this matter to its greatest extent, it would be proper to have experimental farms in one or more parts of these islands, at the expence of Government, with proper superintendants, and servants under them,

to

to make every consistent trial in the various walks of agriculture, so as to ascertain which are the best modes; as well as a breeding farm or farms, under proper regulations, so as to ascertain by proper trials and comparisons, which are the most valuable animals, and best worth the attention of farmers and breeders in their different situations, in every part of these islands; because if we put the lands in this island into four divisions, viz. from nothing to five shillings per acre, from five to ten shillings, from ten to fifteen, and from fifteen to twenty supposing whatever is above the last rent to be adapted rather to grazing than breeding and cultivation: this being the supposed case, we can only have occasion for four different species of neat cattle and sheep. —But some may naturally enough say, that there are a variety of soils, such as clay and sand, &c. We will say, that they will require five or six different species of stock; but if I was to hazard a

conjecture

conjecture, I should incline to think it would be found upon trial that even fewer still will do. But whoever is acquainted with, or has attended to, the varieties of stock in this island, will find, instead of five or six species of neat cattle or sheep, five or six-and-twenty variations or more of both kinds. Nevertheless my intelligent readers will admit, that the same kinds of stock which will do upon the mountainous and high parts of Scotland, will also do upon the mountainous and high parts of Wales and England. Likewise, those sorts which suit the lower hills of Scotland and the North of England, will also suit the lesser hills in Wales, and, I should imagine, on the Yorkshire and Lincolnshire Wolds, as well as the Downs in the South of England; for, I apprehend, Downs and Wolds are only different names for the same kind of rising grounds: and surely those sorts of stock which will answer the end best in the low-lands or plains, in one district of the island,

island, will also answer the end best, in similar parts, in every other district. If this train of reasoning be just, it will necessarily follow, that we shall have occasion for a very few variations of stock: and what these variations should be, I apprehend, attention and application, joined to a few years' experience, will alone discover.

Of the time the different Domestic Animals shed their teeth, and the rules for knowing their age.

NEAT Cattle cast no teeth until turned two years old, when they get two new teeth; at three they get two more, and in every succeeding year get two, until five years old, when they are called full-mouthed, though they

they are not properly full-mouthed until six years old, because the two corner teeth, which are the last in renewing, are not perfectly up until they are six. It may also be worthy of notice, that the first wrinkle upon the horn does not take place until three years old, after which they get another circle, or wrinkle, every year, as long as the horn stands on, though not always equally discernible in all horned cattle; and I am sorry to say, that it is too common for jobbers and cow-dealers to scrape, rasp, or file down these wrinkles in old cattle, to prevent the age being known, and by that means to deceive and impose upon the unwary, ignorant, and unsuspicious.

A Horse does not cast or renew any of his teeth until between two and a half, and three years old, when he casts two above and two below*. Between three and

* Neat Cattle and Sheep have no teeth in the upper jaw before,

and a half and four years, he casts four more, *viz.* two above and two below; and between four and a half and five years old, he casts the remaining four, which are called the corner teeth. It is remarkable that the eight first teeth which the horse renews, make all their growth in about 15 days, while the four last or corner-teeth take about a year and a half to make their full growth. The four first teeth he renews, are called *nippers* or *gatherers*, the next four are called *separaters*, and the four last are the corner-teeth, which also contain the black mark, by which the dealers can so well distinguish the age of a horse. And some may think that I ought to say something of this matter here; but those that want to be acquainted with this doctrine, need only consult Bartlet, or other books upon Farriery, where they will find it fully explained.—Horses have also four

before, but only in the under-jaw, while the Horse tribe has both above and below: indeed the former chew the cud, but the latter do not.

tusks,

tusks, or tushes (as the dealers call them), which stand between the fore-teeth and grinders, and usually make their appearance when a horse is about three and a half years old, but are not at their full growth until the horse be six years old.

Sheep in general renew their first two teeth from 14 to 16 months old, and afterwards, every year about the same time, until they are turned three years old, or rather three-shear, to speak technically, when they become full-mouthed; for, though they have eight teeth in the under-jaw before, I believe they only cast or renew the six inside ones. However, this matter is not perfectly clear, because I find the shepherds differ in opinion, some thinking they cast only six, others again all the eight fore-teeth.

Observations on the above.

IT may be observed, that Sheep renew their first teeth soon after they are past one year old; Neat Cattle, not until they are past two: and Horses, not until they are near three years old. And this is perfectly consistent with the wisdom of the Great Creator in all his works:—because, the horse-tribe live the longest, and are evidently meant to bear the greatest hardships: the bull-tribe the next longest; and though very useful as a beast of draught, yet not at all equal to the horse in firmness and hardiness: and the innocent sheep live the shortest time, and increase the fastest, not being intended as a beast of burden or draught, but to feed and clothe the lords of the creation.—I have heard of particular sheep living to near 20 years old—those which the mountain-shepherds call *guide-sheep, viz.* old wethers kept on purpose to

to guide and direct the bleating flocks upon those unfrequented wilds.—I have also heard of particular bulls living more than 20 years: and I knew a horse* live until 47 years. This horse had a ball lodged in his neck at the battle of Proud Preston, in the Rebellion of the year 1715, and the ball was extracted when the horse died in 1758. This horse was supposed to be four years old in the year 1715, consequently would be 47 in the year 1758.

Now, respecting the judging of the age of the above animals by the renewing of their teeth—though perhaps the best rule we know of, yet I cannot think it is always to be depended on. However, in sheep, I am very certain we are liable to be misled by it; and, I apprehend, much depends upon being early or late lambed, well or ill fed, and so on. Particularly, I have frequently known tups to have what we

* The property of Mr. Rain, of Snow-hall, near Gainford, in the county of Durham.

call four broad or renewed teeth, when by the above rule they ought to have had only two.—A friend of mine, and an eminent breeder, Mr. Charge, of Cleasby, a few years ago, shewed a shearing tup, at Richmond, in Yorkshire, for the premium given by the Agricultural Society there, which had six broad teeth; in consequence of which, the judges rejected Mr. Charge's tup (though confessedly the best sheep), because they believed him to be more than a shearing. However, Mr. Charge afterwards proved, to the satisfaction of the gentlemen, that his tup was no more than a shearing.

Of Domestic Animals of less note.

As it may be expected from a Treatise on Live Stock, or Domestic Animals, that besides Horses, Neat Cattle, Sheep, and Swine, something should be said on Rabbits, Mules, Asses, Goats, Deer, and even Poultry:—for the sake of method, then, I shall beg leave to say, that though these do come under the idea of domestic animals, yet I confess myself so little acquainted with their respective merits, that it would be very wrong in me to attempt a history of them. Indeed, as far as I know, few of them are of much importance to farmers in general, though in particular situations they certainly have their merits; and amongst the most useful of these are

RABBITS.

Large tracts of poor light soils, in many

parts of the kingdom, are employed in Rabbit-warrens, and no doubt may be of great advantage to individuals, as well as to the community at large; for, both the flesh and fur of these little creatures are of considerable value. I was told, when in Lincolnshire, in 1784, that many parts which had formerly been employed or stocked with rabbits, and then ploughed for some years, were now again converted into rabbit-warrens, from their being convinced, by experience, that these little animals made a better return upon those poor light soils, than the plough. I have been informed that the fur of the rabbit is now much more valuable than it was some years since; and the skins of the Lincolnshire rabbits are particularly estimable from their being mostly silver-greys —the down being black, with white hairs thickly interspersed. The skins of this variety sell for four shillings a dozen more than the common sort. These rabbits were sold last year at 3s. a couple;

 which

which 30 years ago sold for 1s. 4d.; a circumstance that may account for these poor soils reverting again from the culture of the plough to rabbit-warrens. There are various modes of taking rabbits, but the trap or pit-fall is by far the most eligible; a description of which I shall take the liberty of transcribing from Mr. Marshall's Rural Economy of Yorkshire. —The *trap* consists of a large pit or cistern, formed within the ground, and covered with a floor, or with one large falling door, with a small trap-door towards its centre, into which the rabbits are led by a narrow muce.

This trap, on its first introduction, was set mostly by a hay-stack—hay being at that time the chief winter-food of rabbits; or, on the outside of the warren-wall, where the rabbits were observed to scratch much in order to make their escape. Since the cultivation of turnips as a winter-food for this species of stock has become a practice,

tice, the situation of the trap has been changed.

Turnips being cultivated in an inclosure within the warren, a trap is placed within the wall of this inclosure. For a night or two, the muce is left open, and the trap kept covered (with a board or triangular rail) in order to give the rabbits the requisite haunt of the turnips; which, having got, the trap is bared, and the required number taken.

In emptying the cistern, the rabbits are *sorted*; those which are fat and in season are slaughtered; those which are lean or out of condition, are turned upon the turnips to improve.

At the close of the season the bucks and the does are sorted in a similar way; the bucks are slaughtered, the does turned loose to breed. One male, I understand, is considered as sufficient for six or seven females; and the nearer they can be brought to this proportion, the greater stock of young ones may be expected: it being

being the nature of the males *(unnatural* as it may appear), to destroy their young, more especially, perhaps, when their proportional number is too great.

Great precaution is requisite in the use of these traps. If too many rabbits be admitted at once, and the cistern be kept close covered only for a few hours, suffocation and inordinate heat take place, and the carcases, at least, are spoiled.—Many thousand carcases have been wasted through this means. The traps are therefore watched; and when the required number are caught, the muce is stopped, or the trap covered.

Asses and Mules

are undoubtedly very hardy creatures, useful in many situations, and, probably, well worth breeding by those that understand them. I remember, some years ago, seeing a fine Spanish Ass at Beverley, fourteen hands three inches high, kept as a stallion,

and covered at no less than two guineas a mare.

These poor creatures are abused and buffeted on all occasions, put to the greatest drudgery and hardships, and seem to be equally despised by man and beast. It is amazing how patiently they bear with the cruelest treatment, and drag out a long life, though under unmerciful loads, and most barbarous usage.

Of Goats and Deer

I know very little; but suppose that the different species of those animals might be greatly improved, by the simple and plain rule of selecting the best males and best females; and breeding from these, in preference to the promiscuous methods, which at present, I am told, are too much pursued: and I can have little doubt, but that the best venison (as well as the best mutton, &c.) will always be found in the truest form, along with the smallest and finest

finest bone; and if so, how easy would it be for a Nobleman or Gentleman to order his game-keeper to choose out a few of the best males and females prior to the rutting season, put them into a fenced place by themselves, give the young ones a particular mark, to know them from the promiscuous race! And a few years will determine whether this matter be worthy the attention recommended. I know great stress is laid upon the pasturage or herbage they feed upon, nor will I deny its effects in a degree; yet I apprehend a right choice of the most valuable males and females of any kind whatsoever, properly attended to, bred from, and the produce depastured along with the promiscuous breed, will shew a much more conspicuous effect.

Of the Feathered Tribe

I acknowledge myself more ignorant than even of the quadrupeds I have last noticed. However,

However, if I am rightly informed by people of nice palates, the small-boned, well-proportioned poultry, greatly excel the large-boned, big kind, in taste, fineness of flesh, and flavour; and if this be the case, it would seem as though the same principle which we have all along endeavoured to establish, held good through all the different classes of domestic animals which supply us with food, viz.—*That of all animals, of whatever kind, those which have the smallest, cleanest, finest bones, are in general the best proportioned, and covered with the best and finest-grained meat. I believe, they are also the hardiest, healthiest, and most inclinable to feed, able to bear the most fatigue while living, and worth the most per lb. when dead.*

APPENDIX.

IN the former part of this work, the native breeds of Sheep, together with their respective varieties, have received a minute discussion.—Such a discussion, indeed, is of the greatest moment both to the grazier and cattle-keeper, and also to the wool-stapler, whose united labours so essentially contribute to promote the commercial interests of Britain. In order, therefore, to render the present edition as complete as the importance of its subject demands, the most respectable sources of information have been carefully examined; from which, as well as from the experience of intelligent and spirited graziers, the subjoined

subjoined account of the MERINO OR SPANISH BREED OF SHEEP has been composed; a breed which, though of comparatively recent introduction into the British Isles, has a very strong claim to public attention, from the powerful influence it promises to have, in meliorating the quality of our staple commodity, WOOL.

The males of the *Merino Breed* have horns of a middle size, but the females are sometimes without them: the faces and legs of both are white, the legs rather long, and bones fine. This breed is asserted to be tolerable hardy, and kindly disposed to take on fat. The average weight, per quarter, of a tolerably fat ram, is about 17lbs.; that of ewes, about 11lbs.*

Notwithstanding the long established celebrity of the Spanish wool, it is a singular circumstance that no attention has in that Country been paid to the form of their Sheep: hence, the shape of the

* Lord Somerville's System pursued by the Board of Agriculture, 8vo Edit. p. 81, &c.

body

body is by no means perfect; and the pendulous skin beneath the throat, or *throatiness*, (as it is termed) which is usually accompanied with a sinking or hollow in the neck, presents an offensive appearance to the eye of an English breeder, with whom symmetry of proportion constitutes a principal criterion of excellence. This throatiness, however, is much esteemed in Spain, being there supposed to denote a tendency both to wool and to a heavy fleece; but it may be removed by drafting off the most faulty ewes, and by paying due attention to the form of the rams, so that in a few years, such defects will perhaps be scarcely found. Yet, though the Spanish Sheep are deficient in these points, they are level on the back and behind the shoulders: and Lord Somerville has proved by *facts*,* which the limits of the present work unavoidably compel us to omit, that there is no reasonable founda-

* Facts and Observations on Sheep, Wool, &c. by Lord Somerville, p. 21, &c.

tion to conclude that deformity in shape is essential to the production of good wool.

The fleece of the Merino Sheep is uncommonly fine, and weighs, upon an average, about three pounds and a half. In colour it is unlike that of any English breed: there is on the surface of the best Spanish fleeces a dark brown tinge, amounting almost to a black, which is formed by dust adhering to the greasy, yolky properties of its pile; and the contrast between it and the rich white colour within, as well as the rosy hue of the skin, that peculiarly denotes high proof, at first sight excites surprise. The harder the fleece is, the more it resists any external pressure of the hand, the more close and fine will be the wool; here and there, indeed, a fine pile may be formed with an open fleece, though this occurs but rarely.* Nothing, however, has tended to render the Merino

* Facts and Observations, p. 21.

Sheep

Sheep more unsightly to the English eye, than the large tuft of wool which covers the head; it is of a very inferior quality, and classes with that produced below the hind legs, on which account it does not sort into the Rafinos (or prime), Finos (or second best), or Terceros (the inferior sort), and consequently is never exported from Spain. It has been Lord Somerville's practice to clip the wool of both these parts of the sheep, twice or thrice in the year; the first clipping being made about six weeks after shearing. Although, by such practice, the weight of the fleece becomes reduced a few ounces, yet its *value* suffers very little diminution: and, if the cats-hair should appear in the head-locks, without being visible in any other part of the fleece (which sometimes occurs) the fleece is thereby rescued from a very great drawback on its value.*

The Spanish flocks, which yield fine

* Facts, &c. p. 24, *note*.

wool, are distinguished by the appellation of *Trashumante*, on account of their travelling from one end of the kingdom to the other: they are wintered in Estremadura and other warm provinces; and during the Summer months they graze on the mountains of Castile, Leon, and Asturias. On the contrary the *Estante* or *stationary flocks* belong to the provinces of Estremadura, Molina, Cordova, and other districts. For the government of the whole, a board or council, termed *La Mesta*, is established, with peculiar laws and jurisdictions, and which is divided into the four departments of Segovia, Leon, Soria, and Cuença. The Segovian and Leonese wool is reputed to be of the finest quality; next, ranks that of Soria, and the wool of Cuença is least esteemed, though the whole is stated to exhibit various gradations in point of quality, *in proportion to the pasture, as well as the care of the farmer or shepherd.**

* Dillon's Abridgment of Bowles's Travels into Spain.

The truly admirable and systematic management of the Merino Sheep, in general, is certainly productive of very great benefit to the wool; but Lord Somerville is disposed to attribute it to *three* circumstances in particular, the last of which is the most important. They are as follow:*

"1st. The use of salt.—It is spread on small tiles or slates, amongst which the sheep are driven, and allowed to take as much as they require: when grazing on limestone soils, they require none. It is supposed, and with great truth, to correct any acidity in the stomach, a disorder common to sheep even in that climate; but of a much more serious nature in the damp climate of Great Britain, more particularly when stocked on green floaty food, such as turnips, vetches, or young clovers. The heavy duty on salt must be prohibitory in this country so far as regards sheep, and for that reason was not laid on

* Lord Somerville's System pursued by the Board of Agriculture, &c. p. 50.

in Spain. But it occurs to me, that chalk may be a most beneficial substitute for it; and though not so warming in its nature as salt, is still as good to correct acidity. Chalk has long been given to fatting calves, for the purpose of correcting this acidity; and why not to sheep and lambs, who are equally subject to it?

"2dly. The practice of rubbing into the wool, red or yellow ochre in the month of September. It is supposed to mix with, and qualify the perspiration, which would otherwise give an asperity to the wool, and to form a coat impenetrable to rain or cold."—It is however, questionable, whether ochre be really rubbed into the fleeces of the Merino Sheep. In the Annual Register for 1764, there is a communication to Mr. Peter Collinson, F. R. S. from Don John Bowles; who therein asserts that in the month of September, red ochre is rubbed into the back and loins of sheep, for the purpose of qualifying that perspiration which would otherwise give an asperity

asperity to the wool, as well as of protecting the animal from cold, a practice considered in Spain, as being beneficial to the wool. Lord S. during his residence in that country was left in doubt, whether any earthy substance was actually applied by the Spanish shepherds, or if so applied, what its real quality was. On his return to London, samples were submitted to the accurate analysis of the late Dr. Garnett, who gave the following result of his experiments.

" Since Friday morning last, Dr. Gar-
" nett has been engaged in experiments
" with the wool, and finds that the sub-
" stance with which it is impregnated,
" is a saponaceous kind of clay, very si-
" milar to fuller's earth. It does not ap-
" pear to have been mixed with oil or
" any kind of grease previously to being
" rubbed on, so that it must either have
" been reduced to powder and rubbed on,
" or tempered with water to a certain
" thickness. There is a small quantity

" of fine silicious sand in the earth, which
" may either have been in it at first, or
" may have adhered to the fleece, and
" can be of no consequence. The wool
" is cleared most completely from the
" earthy matter, merely by washing in
" cold water, and does not seem to pos-
" sess the usual greasiness of common
" wool.

" Forty-six grains of wool, on being
" washed in cold distilled water, gave out
" nine grains of this earthy matter, which
" by different tests seemed to be clay, but
" it is so very viscid, or glutinous, that it
" took more than twelve hours to pass
" through a very porous filter; this is,
" however, the case with most of the
" clayey substances. Dr. G. thinks, that
" nothing resembles it so much as fuller's
" earth. It does not seem to contain any
" iron, when tried with the most delicate
" tests, and therefore is not of an ochry
" nature."

But

But the superiority of the Spanish fleeces is attributed by Lord Somerville,—"3dly. To the incalculable advantages they derive from the due operation of their code of sheep-laws, the Mesta; by changing their climate with the season, so as to preserve an equal temperature of air. Such treatment must benefit the carcases materially; the whole world allows it gives a decided superiority to the wool. Spanish flocks are never let out of the fold to feed, until the departure of the morning dews, which are deemed prejudicial to sheep, and may in part occasion that well known disorder, the rot of the liver. There is little doubt that it is the immediate occasion of the foot-rot; which in this climate rarely makes its appearance before St. Bartholomew's day (the 25th of August). Their sheep are sweated a day or two before shearing, to make the wool part well from the body, as well as, perhaps, to add something to the weight; and are carefully housed during the night, or in cold raw weather,

weather, for some days after shearing. If, in one uniform temperature of climate, this treatment is essential to the health of sheep, and beyond a doubt it is so, how much more is it necessary in the variable and uncertain climate of Great Britain? Yet numbers of us have never given a moment's thought, to what we may suppose would be self-evident to men of any capacity whatever.

"Although we cannot command a temperate or steady climate, much of its severity may be counteracted by cheap and simple means. In the mountainous, or hilly, districts, essential benefit to the wool may be derived from attention to aspect and elevation, as well as soil; and where this attention has been paid, wool is of a superior quality. It is also familiar to every farmer whatever, that the value of the carcase is much influenced by an attention to this circumstance;—by stocking the higher grounds in summer, where fresh air may be found; and low, well sheltered

sheltered lands, lying to the south, when winter advances; but though known, this is for ever neglected in practice."

Convinced of the importance of *shelter* to the health and improvement of sheep, Lord S. has proposed the following simple method of *cotting*, for general use during the cold months. "Two frames, one fastened to the back of hurdles either round the fold, or, if only half round it, on that side where the wind is, and the other forming a penthouse, or cover, towards the inside of the fold, resting on a pole of four or five feet in height, with a declivity of fourteen or fifteen inches, to let the rain run off, will give sheep every protection they require, will keep dry their fodder, and will allow them to seek fresh air if necessary. These frames may be made of five poles, each eight feet long, and at fifteen inches distance from each other, may be bound by withy or rope-yarn, to reeds, long straw, or any light substance, which

will turn wind and rain; by the help of a light drag on four low wheels, these and the hurdles may be moved from place to place, and set up again in as little time as, without such a carriage, is required to change a common fold; the convenience, and trifling expence of such cotting, must defeat every objection to a system, which ought, long ago, to have been in general adoption throughout the island. It is possible, that by a sudden change of wind, when blowing hard, these sheltered hurdles may be thrown down occasionally, and sometimes broken; but they may be replaced at a trifling expence: no other objection occurs to their general use worthy of notice." His Lordship thus concludes this subject, the importance of which has induced the writer of this article to give the present minute account:—

"Not a shadow of doubt rests with me, "that in the short period of five years, "*whatever the breed of sheep may be*, the wool

" wool of the young flock will be *improved*
" ONE FIFTH *in quality, and the carcase*
" *kept up at a reduced expense.*"*

When we consider the vast superiority which British woollen Cloths have long and preeminently held over that manufactured in other countries, it becomes a matter of no little surprize to find (as the subjoined statements will demonstrate) that Great Britain was one of the last powers who turned their attention towards this important national concern.

Sweden, though one of the most remote countries of Europe, appears to be one of the first, into which the enlightened policy of her governors introduced the Spanish sheep, avowedly with the view of improving the wretched Swedish breeds. The first Merino flock was imported from Spain in 1723, by M. Alstroemer, who succeeded in naturalizing and rearing in a severe climate, a race of sheep which it

* Somerville's System, &c. p. 54, 55.

was

was apparently impossible to support out of a warm country. From the year 1740 to 1780, a public bounty of 25 per cent. was allowed to those who sold fine wool: in 1780, these premiums were reduced to 15, and in 1786 to 12 per cent.; and, in 1792, they were no longer granted, as the object proposed was fully obtained.* In 1764, M. Lasteyrie states that there were, in Sweden, 65,369 sheep of the pure Merino blood, and 23,384 of the mixed blood; since which time, their number has constantly increased, notwithstanding the great difficulties presented by the length of the winters and the extreme severity of the climate. The Spanish sheep retain, in Sweden, their original form: their fleeces preserve their equality of length, their elasticity and fine quality of pile: nor is their weight diminished in any respect. M. Lasteyrie mentions that

* Lasteyrie's "Histoire de l'introduction des moutons à laine fine d'Espagne dans les divers Etats de l'Europe," &c. 8vo. 1802, chap. 3. p. 6.

he

he has seen fleeces of Merino rams, weighing 13lbs. each; and that, when they are seasoned to the climate and properly fed, he has seen them larger and finer sheep than in Spain.*

No particular period can be ascertained for the introduction of Merino sheep into the Danish dominions, where, however, they have uniformly been found to prosper when well managed.† In point of priority, Upper Saxony ranks next to Sweden, as the country where the Spanish breed has longest been known and naturalized; and where such naturalization has been attended with the most signal and beneficial success. The first importation took place in 1765, the next in 1778.‡ M. Lasteyrie has carefully inspected many different flocks, the wool of which (both of the pure Merino as well as of the mixed breeds) has been of the first quality.

* Lasteyrie, p. 13, &c. † Ibid. chap. 3. p. 17, &c.
‡ Ibid. chap. 4. p. 23, and fol.

Frederic

Frederic II. first introduced the Spanish sheep into the Prussian dominions in 1786; but the object proposed by that wise Monarch has by no means been answered. Some of these Sheep were distributed through the country, where mismanagement and gross neglect have caused them to degenerate in a very great degree; while part was carried off by diseases. M. Lasteyrie has, however, seen others, that have by proper treatment retained their pristine qualities.*

In the year 1776, the Empress Maria Theresa introduced a flock of 300 Merinos, which were followed about the year 1782, by two other flocks: but a variety of political causes have concurred to impede the progress of this, as well as other departments of Agriculture in the Austrian dominions: notwithstanding these obstacles, there are at present in Bohemia, Hungary, and a few other parts of the

* Lasteyrie, chap. 5. p. 30, 31.

Austrian

Austrian Emperor's territories, several flocks, consisting both of the pure Merino, and also of the improved mixed blood.*

The year 1776 was also the period, when the Spanish breed was introduced into France by M. M. Trudaine, under the direction and with the advices of the celebrated Naturalist Daubenton. The success, which attended their exertions, became at length an object of attention to the Sovereign; by whose orders a choice flock of the finest Merino breed was imported, and settled at Rambouillet, where the most sanguine hopes of success have been answered to the fullest extent.†

Although various efforts had been made, in Holland, to introduce the Spanish breed, yet they all proved abortive, in consequence of gross mismanagement, until M. Twent in 1789, imported *three rams* and *four ewes*. Notwithstanding the animals had suffered

* Lasteyrie, chap. 6. p. 36, &c. † Ibid. chap. 7. p. 41, 45, 51, 52, &c.

severely during their voyage, they soon recovered by judicious treatment: and from this small number, he has raised a numerous flock of pure blood.* His rams produce from 9 to 12lbs. of unwashed wool, and his ewes from 6 to 9lbs.; a quantity exceeding that yielded by the strongest Dutch breeds, the fleeces of which rarely weigh more than 8 or 10lbs.

Having thus given a concise account of the introduction of Merino sheep into various European countries, (whose latitudes in a great degree correspond with our own) we proceed to relate the efforts which have been made in Great Britain, towards carrying the same important design into execution. The Spanish breed was first introduced into this country in 1787:† but the first *effective* step that was

* M. Twent's farm being calculated only to support 200 sheep, he disposes of the surplus every year.—Lasteyrie, chap. 8. p. 100, &c.

† Mr. Bartley's "Letters on extending the growth of fine Clothing Wool," &c.

taken

taken for this purpose, was made by his present MAJESTY; to whose patriotic care we are indisputably indebted for every advantage we may derive from the growth of fine wool; and who received from Spain, in the year 1792, several rams and ewes of the Negretti breed. The circumstances, that attended this importation, present a striking instance of the powerful influence, which deep-rooted prejudices, and a determined adherence to established modes of thinking and acting, have upon men, whose labours certainly contribute very essentially to the commercial prosperity of Britain. The wool of this flock was acknowledged by the manufacturers, who saw it, to be to all appearance of the very first quality; yet none of them would offer a price for it, in any degree equal to what they themselves gave for good Spanish wool; lest it should not prove in manufacture so valuable as its appearance promised. Consequently, it became necessary, to manufacture the wool *at his Ma-*

jesty's own expense, in order to demonstrate its absolute fitness for the fabric of broad cloth. This was accordingly done for several successive years, in various manners, and the cloth uniformly proved of an excellent quality. The persons, however, to whom the wool was thus offered for sale, still continued to undervalue it, in consequence of a prepossession, that, although it might not at first degenerate, yet its quality would, at length, certainly become much deteriorated. In 1796, it was resolved to sell the wool at the price which should be offered for it, even though such price should be inadequate to its *real value*, in order that the manufacturers themselves might make a fair trial of its quality. The clip, or produce of that year's shearing, was accordingly sold for 2s. per lb.; and the clip of 1797 for 2s. 2d.*

* See an interesting pamphlet, intitled a "Project for extending the breed of fine-woolled Spanish Sheep," &c.

The

The value of the wool being thus in some degree known, the produce of the years 1798 and 1799, was respectively washed and sorted agreeably to the Spanish method: and the R. or Rafinos (the prime), which composed nearly four-fifths of the whole, produced in 1798, 5s. and in 1799, 5s. 6d. per lb. It should be observed, that the wool in question had been washed for the manufacturer; and as washing reduces the weight of Spanish wool about one sixth part, a proportionate reduction must be made, which will leave 4s. 2d. for the clip for 1798, and 4s. 7d. for that of 1799. The same prices were obtained from the clip of 1800 and 1801; since which time the sums have progressively increased, so that the R. or prime wool of the ewe flock, has sold for 6s. 9d. and that of the rams, at 6s. 6d. per lb.

It may be proper to observe, that his Majesty's flock of pure Merinos was for some time at Oatlands, the seat of H. R. H. the Duke of York: on their first arrival,

the sheep were extremely low in flesh; but, in proportion as they were put into keep, they improved in flesh, and the various diseases, which had affected them, were entirely removed; and the sheep left Oatlands Park, considerably advanced in bulk, renovated in their constitutions, and their wool, in quantity and quality, the admiration of every body.* Sir Joseph Banks, to whom the direction of this flock has been committed, has stated that it has been fed on grass in the summer, and on hay during the winter: nor has any particular management been adopted with regard to the sheep, excepting that they have not been folded on fallow land, and that in winter and during hot weather they have access to a shed, erected without walls, under which they frequently lie down. Sir J. Banks is of opinion, that they have thriven as well as other breeds

* For this interesting fact, we are indebted to Mr. Malcolm's "Compendium of Modern Agriculture," &c. vol. 1, p. 371, 372.

of

of sheep kept on the same land, and under the care of the same shepherd.*

Of the various individuals, whose exertions demand our grateful acknowledgments for their attempts towards rendering his Majesty's patriotic views, in the introduction of Merino Sheep, permanently useful, we regret that our limits compel us to notice only two: viz. Dr. Parry of Bath, and the Rt. Hon. Lord Somerville, the late President of the Board of Agriculture.

Dr. Parry first began his experiments with *Morfe* ewes, which however, he conceived, he soon had good reasons for discarding; and accordingly selected his ewes from the pure Ryeland, or Herefordshire breed, which were altogether uncontaminated by the admixture of any of the larger and more fashionable kinds. The rams employed for the original crosses were

* Dr. C. H. Parry's "Facts and observations on wool," &c. 4to. 1800, p. 28.

Merinos, from his Majesty's flock, as also from that of Lord Somerville. As far down as the fourth generation, all the rams proved to be horned, but the ewes were uniformly hornless.† It may be proper to remark that the whole extent of land, occupied by Dr. P. did not amount to 60 acres; of which the largest inclosure comprized 14½ acres, and the smaller ones varying from three to five, seven, or nine acres. Nearly the whole is very much exposed to the influence of the sun and weather; and the sheep have been disposed on it at different seasons, merely with reference to their security and food, and the dryness of the soil. No particular care has been taken of them during the winter: nor had any of them ever been housed, except the ewes for two or three nights after lambing, if the weather were

* See Dr. Parry's "Facts and Observations," &c. p. 4, 5, 91;—also his communication inserted in the "Letters and Papers" of the Bath and West of England Society, vol. 1. p. 83, &c.

severe. His land is successively manured with stable-dung, coal-ashes, and other soil, and also by folding: the greater part of it produced good crops of grass; and at least, one half of it is coarse and rich. The fatting sheep (as usual) have had better keep than the store sheep; and the rams and lambs have generally gone with the former except during the tupping season. In the spring and summer of 1799 (when Dr. P. wrote the present statement), they were chiefly supported on wild endive and cabbages; they have always had Scotch cabbages and hay in the autumn, winter, and spring; and in the winter of 1799 they were wholly fed on those articles, with the addition of ground oil-cake.*

Such were the means employed by Dr. Parry; who has been repeatedly honoured with the premiums of the Bath and West of England Society, for the wool produced

* Facts and Observations, p. 29, 30.

by

by the sheep during the last fifteen years which he has devoted to the cultivation of a breed of sheep. The result of his experience (communicated to the same respectable Society) may be comprized in the following propositions; the proofs of which we regret that the limits of this Appendix unavoidably require to be omitted.

* " I. The wool of the fourth cross of " this breed is fully equal in fineness to " that of the male parent stock in Eng- " land. Unless by accident the wool of " no dip, short of the fourth, equals in " fineness that of Spain."

" II. By breeding from select Merino " Ryeland rams and ewes of this stock, " sheep may be obtained, the fleeces of " which are superior both to those of the " cross-bred parents, and of course to " those of the original progenitors of the " pure Merino blood in England."—

* Bath Papers, vol. 10. p. 83. 94.

[Hence

[Hence it is evident that the assertion of the very respectable agriculturist, Mr. Knight, of Elton, is founded only on a partial view of the subject: for he has said "some crosses have lately been made "with Spanish rams, but the produce I "have seen are ugly, and are, I am in-"formed, subject to the foot-rot."*— From the strictest inquiries that can be made, the converse of Mr. K.'s statement appears to be the fact; and that the sheep in question, are no more subject to the foot-rot, than any native breed.]

"III. From mixed rams of this breed "sheep may be obtained, having wool, at "least, equal in fineness to the best which "can be procured from Spain."

"IV. Wool, from sheep of a proper "modification of Merino and Ryeland, "will make cloth equal to that from the "Spanish wool imported into this coun-"try."

* Communications to the Board of Agriculture, vol. 3. p. 187.

"V. The

" V. The proportion of fine wool in " the fleeces of this cross-breed is equal, " if not superior, to that of the best Spa- " nish piles."

" VI. This wool is more profitable in " the manufacture, than the best Spa- " nish."

" VII. The lamb's wool of the Merino " breed will make finer cloth, than the " best of that of the pure Merino breed."

" VIII. Should long wool, of this de- " gree of fineness, be wanted for shawls, " or any manufactures, which cannot be " perfected with any common coarse long " wools, the rams fleece of the cross-breed " (which was numbered 23 in Dr. P's spe- " cimen of cloth), will prove that this can " be effected by allowing the fleece to " remain on the animal, *unshorn for two* " *years*."

" IX. Though I have never selected a " breeding ram or ewe, on account of any " other quality than the fineness of the " fleece, this stock is already much im-

" proved

" proved as to the form of its carcase, " comparatively with the Merinos origi- " nally imported." This last proposition was supported by the exhibition of sundry sheep and lambs, which *had been fed only on grass*; and which prove, according to Dr. P.'s statement of facts, that by a proper selection, this breed may soon become equal in carcase to the best South Downs.

Equally conspicuous for similar patriotic exertions, stands Lord Somerville, whose efforts in promoting the same national object, we now proceed succinctly to notice. Some years since, his Lordship undertook a voyage to Portugal, for the sole purpose of selecting by his own judgment, from the best Spanish flocks, such sheep as united, in the greatest degree, the merit of a good carcase to the superiority in wool, which the Merino flocks are allowed to possess. As his object was, not merely to obtain the sheep themselves, but also to acquire the whole system of sheep-husbandry as practised in Spain, he had difficulties, of no common

common magnitude at any time, to encounter; but which were very considerably augmented by the hostile situations of Great Britain and Spain, as well as by other causes, not necessary here to be mentioned. His efforts were crowned with success: and in 1801 he brought home a flock of the first quality, selected from the *Trashumante* or travelling breed of Merino sheep; which were the admiration of the (Spanish) shepherds through whose flocks they passed in their journey to England.*

The Merino rams have ever since been put, and continue to be put, to ewes of the South Down and Ryeland breeds; from each of which crosses a valuable sheep has been obtained both in fleece and in carcase; for these his Lordship has received sundry honorary premiums from the Bath and West of England Society; in addition to which, the very considerable sums, which his spare stock annually produces,

* Lord Somerville's System, &c. p. 74, &c.

will

will sufficiently prove the growing value of the Merinos and their respective crosses.

As it would require more space than can be allotted to this article, to detail Lord S.'s various successful crosses, the following is offered as the result of the whole.*

South-Down store ewes at 3lb. per fleece, and at 1s. 10d. per lb. will pay 5s. 6d. per fleece; which, at 6½ per acre in good upland pasture for seven months, and five months in turnips at 14 or 15 per acre, will pay 38 or 40s. per acre.

Ryeland store-ewes, 2¼lb. per fleece, at 2s. 2d. per lb. untrinded, nine sheep per acre, and turnips as above, will pay 2l. 3s. 10½d. per acre.

South-down and Merino ewes of the half-breed at 4lb. per fleece clean-washed,

* The numerous accounts, from which the above statement is composed, may be seen at length in the "Communications to the Board of Agriculture," vol. 2. p. 459, 473. Lord Somerville's "Facts and Observations," &c. p. 1,—63. "Letters and Papers" of the Bath and West of England Society, vol. x. p. 67,—75.

at

at 3s. per lb. will amount to 12s. per fleece; which at 7½ per acre for seven months, amount to 4l. 10s. per acre for the pasture land, with turnips as above for winter keep.

Ryeland and Merino ewes of the half blood, at 10 per acre for seven months, and turnips as above, at 3½lb. per fleece, and 3s. 2d. per lb. amounts to 6l. 10s. 5d. per acre.

The pure Merino fleeces never sold at less than one guinea each; the average weight of which has been more than 6lb. each in the yolk; and on the above allowance of pasture for seven months, and turnips as above in aid of that pasture, the return will amount to *ten guineas* per acre.

It may be proper to notice, that Lord Somerville's farm consists of 460 acres, of which 85 are occupied for a dairy and unfit for sheep, unless for a few couples during the spring. His flocks have been pastured as follows:

56 Acres

56 Acres, one and two years old clovers; indifferent keep, some worn-out ley.
85 ditto, marsh and capital pasture.
35 ditto, upland summer pasture.
5 ditto, just taken in hand, foul.
7 ditto, keep upon 30 acres of water-meadow for six weeks in the spring, equal to one fourth of the number of acres, or seven.
Total 188 Acres; besides the run of 33 acres of turnips.

But it should be observed, that 16 oxen plough occasionally in the same ground, but twelve were constantly depastured; four horses occasionally, four cows constantly, till the after-grass: to this is to be added the run of yearling calves, and of a large stock of pigs; and that the green crops, of the spring and summer, 1803, were unusually deficient in the districts around Lord Somerville's farm. The sheep stock consisted of

302 lambs
783 store sheep

Total 1085

The produce of which was as under:

	£.	s.	d.
Wool, 12 packs, 1 score -	446	0	0
216 store Sheep sold - -	409	3	0
132 fat Sheep, sold and used -	238	16	2
Letting of Rams - - -	524	10	0
	£1618	9	2

From this total, however, 26l. are to be deducted for the keep of sheep (occasioned by the total failure of grass in the Marsh from the severe drought in September) in Sir John Trevelyan's Park, valued at 18l. and about six tons of hay, at 12l. 12s. or two guineas per ton. From this sum of 30l. 12s. taking 4l. 12s. for turnips, the total amount will stand thus:

£.	s.	d.
1618	9	2
26	0	0
Total Produce £1592	9	2

N.B. No sheep were ever kept fattening, older than four-teeth: the fat sheep were all

all sold, after being shorn; and the price of mutton, in consequence of the deficiency of keep, was not more than 4½d. per lb. at one part of the season.*

The length of the *staple* or filaments is various: from the accurate observations of Dr. Parry, compared with the specimens taken from Lord Somerville's Merinos when newly imported, it appears to be about 3¼ or 3½ inches. But the proportion of fine wool in fleeces of the Spanish race greatly exceeds that of any pure English breed; and the rate of amelioration of wool by the Spanish cross is progressively great. Thus, according to Dr. P.'s results, the first cross of a new breed gives to the lamb half of the Ram's blood,

Or	50 per cent.
The Second gives	75
Third	87½
Fourth	93¾

After which period, if the ewes have been judiciously selected, the difference of

* Bath Papers, vol. 10, p. 74.

wool, between the original stock and the mixed breed, is stated to be scarcely discernible, even by the most able wool-staplers.

A similar result is given by M. Fink, one of the most successful cultivators of sheep husbandry, on the Continent, from whose valuable Treatise on the "Rearing of Sheep in Germany, and on the Improvement of Coarse Wool,"* we have selected the following particulars.

M. Fink is justly of opinion that the *fineness* of wool depends wholly on the breed of sheep, and is in no respect influenced either by climate, soil, or food; but the *quantity of wool* depends entirely on the quantity and nature of the food. Thus, if a flock be allowed to become hungry, the growth of the wool will naturally and necessarily be impeded; its softness will disappear; the pile will become in a manner matted, and consequently less

* Published (in German) at Halle, in Saxony, in 1799.

useful.

useful. But if the bad wool be clipped off, and the animal fed with plenty of succulent food, and occasionally sheltered during the winter, it will yield a more profitable fleece, which will possess a natural elasticity.

From what has already been stated, it will be obvious, that the judicious crossing of the best specimens is the only rational way of improving the various breeds of sheep: and in proportion to the degree of perfection existing in the rams, which are destined to serve our flocks, the more quickly will that improvement be accelerated. The gradual progress of amelioration is founded in nature, who rarely deviates out of her path; so that, with care and by a proper choice of individuals, it becomes no difficult task to approximate towards that point from which the improvement of the breeds is to commence.

Supposing the ram, whose superfine staple is intended to be incorporated with a

flock of common sheep, to be designated by No. 1.

The Ewe, whose fleece is of a coarser pile, and who is to be coupled with the ram, will be denoted by 0.

Now, (to calculate on the unfavourable side of the question) as the sire has more influence upon the progeny than the dam, it follows that the offspring of a fine-woolled ram and a coarse-woolled ewe, will yield a fleece, which will bear a greater analogy to its sire than to its dam. But supposing both parents to possess equal qualities, the lamb of the *first generation* will partake of the qualities of both; and will of course possess half the properties of its dam, which may be denoted by 1 more than 0, or $\frac{1}{2}$.

The ram, in the *second generation*, being designated by 1,

The ewe, which is to be crossed by it, and which has received a degree of amelioration, will (as just noticed) be marked by $\frac{1}{2}$.

The

The lamb, that will proceed from such union, will participate in the qualities of its sire, in the proportion of $\frac{3}{4}$.

The ram, for the *third generation*, being 1,

The ewe, crossed with him, will be $\frac{3}{4}$,

And the progeny of such cross will possess of the qualities of its sire $\frac{7}{8}$.

The sire, for the *fourth generation*, being 1,

And the ewe, to be put to him, being $\frac{7}{8}$,

The lamb from such coupling, will possess of his sire's qualities $\frac{15}{16}$.

Finally, the ram for the *fifth generation*, being invariably 1.

And the ewe of the fourth generation, to be crossed by him, being designated by $\frac{15}{16}$.

Their joint offspring will partake of its sire's qualities, in the proportion of $\frac{31}{32}$.

And consequently its fleece will, in point of fineness, be nearly equal to that of his sire.

The

The breeder may depend on the successive generations for producing individuals, equal, and even superior in point of quality to the sire; provided the requisite attention be paid to the selection of parents in every future generation. The following rules, proposed by M. Fink, are founded on the principle above developed, and may in general be relied on with safety.

" I. Whoever is desirous of improving " the fineness of his wool, must procure " the finest rams that can possibly be se- " lected, especially at the commencement " of his undertaking: for, if the sire, for " the second generation, be more valuable " than the ram employed for the first, the " progress of the intended improvement " will evidently be retarded."

It may be proper here to notice, that the *proper adaptation* of rams, though so obviously necessary to be regarded, has only of late years received that degree of attention which its importance demands. In this respect, the conduct of the late

eminent

eminent and lamented agriculturist, the Duke of Bedford, is peculiarly worthy of imitation. Previously to drawing off any ewes for particular rams,* it was his constant practice to select every ram, together with the lambs begotten by him in the preceding year, from the rest of the flock, and confine them in separate pens, in order that he might examine them and their issue, and consequently be enabled to make a proper determination.

" II. The fineness of the wool will im-
" prove in proportion as the wool is finer,
" which the ewe of the first race pos-
" sesses.

" III. Great care is absolutely neces-
" sary, that the rams employed for subse-
" quent breeds be as fine as the first:
" otherwise the progressive improvement
" will either be totally impeded, or at
" least greatly retarded.

" IV. In case a breeder is desirous of
" stopping at a particular degree of fine-

* Complete Grazier, p. 46.

ness,

" ness, he may easily obtain his request: " for, by taking a ram and a ewe of the " first or second generation, he will have " one half or three fourths fine; and the " melioration of the fleece will stop at " this point.

" V. Unless the breeder be minutely " attentive to the choice of his rams, the " lambs produced by such union will have " only one fourth part of the Spanish " fineness.

" VI. If an unimproved ewe be put to " a ram of a mixed breed, that has only " one fourth part of Spanish blood in him, " the progeny will have only one eighth " of Spanish blood. In this event, the " line drawn between the generations, to " which the sires and ewes respectively " belong, gradually becomes more mark- " ed, and at length a complete separation " between the two breeds will be effected."

As the subject of *shearing* has been incidentally noticed in the preceding pages, it may not be improper to subjoin a few supplementary

supplementary particulars, more directly applicable to the Merino sheep.

It is by no means decided among farmers, whether it is proper to clip lambs. Dr. Parry, indeed, is of opinion that, in our climate, and in warm and sheltered inclosures, the fleece does not appear necessary for the protection of the lamb; while, on the other hand, it becomes troublesome as the heat increases, and by harbouring the sheep-tick, becomes greatly prejudicial to the animal. If lambs therefore be shorn about the beginning of August, or somewhat sooner, the wool will be valuable; and, by the latter end of November the fleece will have acquired such a length as to protect the animals under common circumstances of inclosure. The wool of the lamb, Dr. P. remarks, is very different in quality from that of the sheep; and the mixture of the two would have a very bad effect upon the fleece of the first year, which would otherwise probably be the finest produced during the life of the

animal. The inference is, that every proprietor of Spanish sheep, who is anxious to raise the finest wool, should endeavour to shear his lambs.*

The time of shearing sheep ought, as Dr. Anderson has well observed, to be regulated by the general disposition which the fleece shews to spontaneous separation from the skin, although this may in some degree be regulated by the state of the weather. Thus, as hot weather renders the fleeces troublesome to the animal from their closeness, and (especially to lambs) from their harbouring the sheep-tick, Dr. Parry has found the middle of June a good time for shearing: and he states that he has never lost any of his sheep in consequence of that operation.—As to the mode of shearing, he gives a decided preference to the circular clipping of the fleece, which is the most saving method to the fine Spanish wool. This practice

* Facts and Observations, p. 86—89.

has

has been introduced from the County of Lincoln into Bedfordshire by the late Duke of Bedford; by Mr. Coke, of Holkham, into Norfolk; and by the Earl of Egremont into Sussex; whence it will probably spread into other grazing Counties.

In England, it is the universal practice to wash the sheep previously to shearing: in Spain they are never washed. It is, in fact, very difficult to make the water penetrate through the fleeces of the fine-woolled sheep; and the fleece, when once thoroughly soaked, is extremely long in drying. Though this (often fatal) practice may succeed in cleansing the loose, harsh, dry English fleeces, it is by no means effectual in cleaning those of the Spanish breed; and, from their greater incapacity of drying, is much more dangerous to the sheep. The difference of method, Dr. P. remarks, cannot be material to the shearer, who is usually paid by the day: and, as wool resists the moth better,

better, and scours by the clothier, much better in the yolk than when it has been washed, he has of late altogether declined the washing of any of his finest woolled sheep.*

A singular experiment was recently tried at the French national farm at Rambouillet, upon the Merino sheep, which denotes the peculiar tendency of this breed to carry wool. A ewe, 18 months old, was left unshorn: the next season, her fleece, when clipped, weighed 14lbs. 10 oz.; and its pile, which was double the usual length, lost nothing in point of weight, because few ewes would have given more wool, if shorn at the usual period. Another ewe was shorn, at 30 months old, and gave a still greater quantity of wool, although she was then suckling a lamb: her fleece weighed 21lbs.; and the pile was eight inches long. In the ninth year (1800) eight ewes, whose

* Facts and Observations, p. 89.

fleeces

fleeces were of two years' growth, yielded from 16 to 20lbs. each. The result of these different experiments is, that Merino wool of two years' growth will double its length, and preserve all its fine quality: it was not observed that the sheep, subjected to these experiments, suffered particularly from heat, or that their health was, in any degree, injured. It is possible, Lord Somerville remarks,* that this property in the Merino fleece to grow beyond the period usual in our breed of sheep, may be productive of some new manufacture, where great length and fine quality of pile is requisite; but the hazard of the blow-fly, and the chance of losing in hedges and brakes any part of a fleece after it is once fit for a manufacture, will not allow such a practice to become general; admitting even that the sheep suffer nothing in their proof during the summer months from the weight of the fleece (which in a large scale

* Facts and Observations on Wool, p. 42.

of

of practice is improbable,) and that the wool should be found to pay as well for growing to this length, as it would when shorn in common course.

It only remains now to state one or two particulars relative to the time of putting Merino ewes to the rams. Generally speaking, there is great difference in practice according to the different views of the farmer. The natural disposition commences at the close of the summer; and, calculating the time of gestation at 20 weeks, the farmer avails himself of these circumstances in some of the larger breeds, in order that lambs may be dropped by, or before Christmas, for the purpose of fattening as house lambs. In the smaller breeds, this practice is not followed, as it would not answer; especially where there are no warm pastures, and few or no turnips, or other early food. Hence Dr. Parry remarks, that the general practice with the owners of South Down flocks is, to have their

their lambs dropped so late as April or May:* and he conceives that this example should have its due weight with the breeders of Spanish sheep; not only from the probable scarcity of food on those lands whereon they will probably be fed, but also from the peculiar nakedness of the newly yeaned lambs, which are ill prepared to resist the cold of those exposed situations at an early period of the year. His experience in this subject shews, that lambs dropped in the beginning of April are, by the end of the season, larger than those yeaned in February: and, so far as his experience in the fattening of these sheep goes, the most profitable time for this purpose, the wool and carcase being taken together, is, when they are six-toothed, or three years old.

Such are the statements and facts, here offered from numerous sources to the consideration of the attentive and reflecting

* Facts and Observations, 4to. p. 90.

breeder; the vast importance of which will, it is hoped, be admitted as an apology for the apparently protracted length of this chapter.

ERRATA.

Pp. 9 and 33. For *Blakewell*, read *Bakewell*.

INDEX.

*** The Roman numerals refer to the pages of the introduction, the Arabic figures to the rest of the work.

	Page.
Age of live stock, remarks on,	208, 214
Alderney breed of neat cattle,	72, 73
Asses,	219, 220

B.

Bakewell, Mr. his mode of improving breeds,	ix, x.
Beef and *Mutton*, remarks on,	190, 194
Black cart-horses,	80
Breeds, general remarks on the British,	i, xv.
—— of *horses*, described,	21, 36
—— of *neat cattle*,	37
—— *Irish*,	90, 91

Page.

Breeds of *sheep* (synopsis of) under the article *Sheep* in this index. . . 102

Bull, description of, . . 38, 40

C.

Cattle, general remarks on, . . i, xv.

——— names of, at different ages. . xvi, xx.

And see the article *Breeds*, in this Index.

Cheviot, breed of sheep, . . 150, 159

Cleveland Bay, horses, . . 25

Clydesdale, horses, . . . 29

Crossing, to the best advantage, . x, xii.

D.

Deer, . . . 220, 224

Devonshire, breed of neat cattle, . 51, 52

——— sheep, . . 125

Dishley, breed of sheep, . . 105, 121

Dorsetshire, breed of sheep, . . 127, 132

Dun-faced breed of sheep, . . 160, 161

Dutch breed of neat cattle, . . 40, 50

E.

Ex-Moor breed of sheep, . . 125, 126

F.

Folding, observations on, . . 195, 208

G.

	Page.
Galloway, or *polled* cattle,	59, 65
Goats,	220, 221

H.

Heath breed of sheep,	143, 146
Herdwick breed of sheep,	147, 150
Herefordshire breed of neat cattle,	52, 53
——— of sheep,	132, 136
Hogs, see *Swine*.	
Horse, description of,	21, 22
Cleveland bays,	25
Suffolk Punches,	27
Clydesdale horses,	29
Heavy black,	30
Welch,	35
Scotch,	35, 36

I.

Irish sheep,	166, 170

K

Kyloes, breed of neat cattle,	67, 72

L.

Page.

Lancashire, or *long-horned* breed of neat cattle, 53, 59
Lincolnshire breed of sheep . . 111, 121
Live-stock, general remarks on, i. And see characteristic distinctions of excellence in, . v, viii
——— obstacles to their improvement, ix, x
——— remarks on the teeth of, as affording a criterion for discovering their age, . 208, 214

M.

Merino, or Spanish breed of sheep, . 223, 274
——— description of, . . 224
Mules, . . . 219, 220

N.

Norfolk breed of sheep, . . 139, 143

O.

Oxen, remarks on, . . . 83, 86

P.

Poultry, . . . 221, 222

Rabbits

R.

	Page.
Rabbits,	215, 216
Ram, description of,	103, 104

S.

Scotch horses,	35, 36
Short-horned breed of neat cattle,	40, 50
Sheep, different breeds of,	
Cheviot,	150, 159
Devonshire Natts,	125
Dishley,	105, 121
Dorsetshire,	127, 132
Dunfaced,	160, 161
Ex-moor,	125, 126
Heath,	143, 146
Herdwick,	147, 150
Herefordshire,	132, 136
Irish,	166, 170
Lincolnshire,	111, 121
Merino, or Spanish,	223, 274
Norfolk,	139, 143
Shetland,	162, 165
South Down,	136, 138
Tees-water,	121, 124
Shetland, *South Down*, *Spanish*,	sheep, see the preceding article.

Page.

Suffolk Duns, (neat cattle) . . 65, 67
Suffolk Punches, (horses) . . 27
Sussex breed of neat cattle, . . . 52, 53
Swine, different breeds of, . . 171
Berkshire, . . . 172, 173
Chinese, or black, . . 174
Highland, or Irish, . . 175, 176

T.

Tallow, remarks on, . . . 194
Tees-water breed of sheep, . . 121, 124
Teeth of live-stock, general remarks on, 20, 214

W.

Welch horses, . . . 35
Wild breed of neat cattle, . . 73, 78

FINIS.

G. Woodfall, Printer,
Paternoster-row.

This Day is published, in 8vo. price 5s.

FACTS AND EXPERIMENTS

ON THE

USE OF SUGAR

IN

FEEDING STOCK:

WITH HINTS FOR THE CULTIVATION OF

WASTE LANDS,

AND FOR IMPROVING THE CONDITION

OF THE LOWER ORDERS OF PEASANTRY IN

GREAT BRITAIN AND IRELAND.

WITH

AN APPENDIX,

CONTAINING AN ACCOUNT OF

TWO SUGAR FED OXEN,

WHICH OBTAINED LORD SOMERVILLE'S PRIZE AT THE LATE CATTLE-SHOW.

LONDON:

PRINTED FOR JOHN HARDING,

No. 36, St. James's Street.

HARDING and WRIGHT, Printers, St. John's Square, London.

Lately published, by J. Harding, 36, St. James's Street, London, for the Use of Country Gentlemen, Architects, and Builders.

1. BARBER'S INSTRUCTIONS for BUILDING in PISE, or the Art of erecting strong and durable Walls to the height of several Stories, composed wholly of Earth and the most common Materials, with Six Plates, descriptive of the Implements used in Pisé Work, and ground Plans and Elevations of Cottages, Farm Houses, &c. &c. 4to. 10s. 6d.

2. DESIGNS FOR COTTAGES, COTTAGE FARMS, AND OTHER RURAL BUILDINGS; INCLUDING ENTRANCE GATES AND LODGES. Designed in a Style of peculiar Beauty, and possessing every Advantage of interior Accommodation and economical Arrangement, by Joseph Gandy, A. R. A. with 43 Plates, each accompanied with a Ground Plan, Estimate, and Letter-press Descriptions. 4to. price 2l. 2s.

CONTENTS.

Plate 1. A Cottage of one Room, for a Labourer, Gate-Keeper, &c. 2. Another. 3. A Cottage, with Conveniencies for keeping Pigs, &c. 4. Ditto of two Rooms, intended for a Park. 5. A double Cottage. 6. A Cottage for a Labourer who keeps a Cow, &c. 7. Another. 8. Ditto, of two Rooms. 9 Ditto, with a Bed-room above stairs. 10. An ornamental Cottage for a Gentleman's Grounds. 11. Cottage, with Bed-rooms above. 12. Cottage, with Cow-house, &c. under one Roof. 13. Ornamental Cottage for a Park. 14. A Cottage Dwelling of two Rooms. 15. Picturesque Cottage for a Shepherd. 16. Cottage and Bridge. 17. Country Residence, with Bed-rooms above. 18. Plan for two or four Cottages on the Banks of a River, and Sketch for a Bridge. 19. Picturesque Farm-dwelling. 20. A small Country Residence. 21. A Cottager's Dwelling. 22. A Green-house and Conservatory, with Residence for the Gardener. 23. Farrier's Shop, with Stables and Habitation annexed. 24. A Picturesque Cottage of three Rooms. 25. A Cottage of three

Rooms. 26. Habitation near a Market-town. 27. A Picturesque Building designed for a Public-house. 28. Residence for a Market-town. 29. A double Cottage, with Conveniences for Farming. 30. Picturesque double Cottage. 31. A small Farm. 32. A Picturesque Farm-dwelling. 33. A Grazing Farm. 34. Gentleman's Farming Residence. 35. Circular Group of eight Cottages. 36. Plan for a Village. 37. A Country Residence, or Hunting Box. 38. A double Lodge, and arched Entrance to a Park. 39. Circular single Lodge and Gate. 40. Single Lodge and Covered-way. 41. A double Lodge, consisting of thatched Cones. 42. A Lodge, with octagon Piers and Ornaments. 43. A Lodge, and arched Gateway.

---

3. THE RURAL ARCHITECT;

Consisting of various Designs for Country Buildings; accompanied with Ground Plans, Estimates of Expences, and Descriptions.

PRINCIPAL CONTENTS.

Cottages of the most simple Form and economical Construction; House of Business, or Office, as suggested by Mr. Marshall; Dairies; A Mill; Group of thirteen Cottages, designed for the Neighbourhood of a Manufactory; Gardener's Cottage; Bath; several double Cottages: Cottages for three, four, and five Families; Ornamental Cottages; Plan of a Manufactory and Workshops; Groups of Cottages, designed upon a Principle of exciting Emulation, and rewarding meritorious Exertion; Habitation for an Overseer of Labourers; Arable, Dairy, and Grazing Farms; An Inn; Villas and small Country Dwellings; Entrance Gates; Single and Double Lodges, &c. &c. &c. A Rural Institute, or National Establishment, for the Advancement of Agriculture, on Mr. Marshall's Plan.

4. ROBERTSON'S DESIGNS for HOT-HOUSES, GREEN-HOUSES, GARDENS, &c. &c. 4to. with Plates, 2l. 2s.

5. ROBERTSON'S DESIGNS for GATES, ENTRANCE LODGES, BRIDGES, RUSTIC CHAIRS, and GARDEN ORNAMENTS, 4to. 2l. 2s.

MERINO SHEEP, WOOL, and RURAL AFFAIRS.

BOOKS lately Printed for J. HARDING, St. James's Street, London.

1. FACTS and OBSERVATIONS on SHEEP, WOOL, PLOUGHS, OXEN, &c. in which the great Importance of the MERINO BLOOD in improving the short-woolled Breeds of Sheep is demonstrated from actual Practice; with Remarks on Cotting, and on the Use of Salt in feeding Sheep, together with Hints on Ploughs, Wheel Carriages, improved Implements, Farm Accounts, &c. &c. by the Right Hon. LORD SOMERVILLE. Third Edition, with Plates, Price 8s.

2. BAKEWELL'S OBSERVATIONS on the INFLUENCE of SOIL and CLIMATE upon WOOL; shewing an easy Method of improving the English Clothing Wools; and preserving the Health of Sheep; with Hints for the Management of Sheep after Shearing, an Inquiry into the Structure, Formation, and Growth of Wool and Hair; and Remarks on the Means of preserving the best Qualities of the Spanish Breed of Sheep unchanged in different Climates; with Notes and Remarks, by the Right Hon. Lord Somerville. Octavo. Price 6s. 6d.

3. LUCCOCK'S GENERAL ESSAY on WOOL; containing a particular Account of the British Fleece, with Hints for its Improvement, addressed to the Grower, Dealer, and Manufacturer. A New Edition, Price 7s.

4. OBSERVATIONS on the UTILITY, FORM, and MANAGEMENT of WATER MEADOWS, and on Draining, and Irrigating Peat Bogs, by W. SMITH, Engineer and Mineralogist to the Duke of BEDFORD and Mr. COKE. 8vo. with Plates, 8s.

5. The FARMER'S ACCOUNT BOOK; consisting of 52 ruled Tables, printed on Writing Paper, by means of which an accurate weekly Account may be kept with the greatest Ease of the Stock and Crops, and *every Thing done on the Farm* throughout the Year. This work, calculated to simplify the Keeping of Farm Accounts, is recommended to the Notice of Stewards, Bailiffs, and Farmers of every Description. Folio, 21s. for a Year's Accounts.

6. The GAME BOOK, for the PRESENT SEASON, enabling the Sportsman to keep an Account of the different Kinds of Game, when and where killed, how disposed of, and other particulars; forming a complete Sporting Pocket Journal; price 7s., 10s. 6d., 21s., or 2l. 2s. according to size.

HARDING and WRIGHT, Printers, St. John's Square, London.

must have a knowledge of all other parts of farming

10 a proper breeding is in it.

Breed from the best males & females.
best can only beget best. like begets like

22 for speed an animal should be
wide on the top of the shoulder.

28 Deep bellied horses able to stand much work
as they carry their food with them so much
longer.

32 The hardiest breed of Cart horses was for
a cross of a Holstein stallion & Yeas or otter mare

40 In cattle Tail high.

41 very thinned skinned animals sometimes good milkers.

45 Holderness the inferior Black backed
Yorkshire Breed or Durham short horned

47 Holderness cattle feed the East India Ships.
they thrive as coarser & thicker meat than other
the Indias must longer.

52 Nine chilled animals arrive at maturity at
an early age.

57 The discovering Coke's first experiments.

59 Some plain & big bellied. symptoms of good milkers

animals with large bones do not readily

fatten. 178

large animals many Qualities & amongst th

are subject to disease 183